GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: April 8, 2005, 11:17:50 ; Search time 4940 Seconds
(without alignments)
11064.268 Million cell updates/sec

Title: US-10-658-180-246
Perfect score: 1128
Sequence: 1 tcgagaaaagagaggctgaa.....tgcttcaattaggtaatgag 1128

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 4708233 seqs, 24227607955 residues

Total number of hits satisfying chosen parameters: 9416466

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : GenEmbl:*
1: gb_ba:*
2: gb_htg:*
3: gb_in:*
4: gb_om:*
5: gb_ov:*
6: gb_pat:*
7: gb_ph:*
8: gb_pl:*
9: gb_pr:*
10: gb_ro:*
11: gb_sts:*
12: gb_sy:*
13: gb_un:*
14: gb_vi:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1128	100.0	1128	6	AR412266	AR412266 Sequence
2	1128	100.0	1128	6	AX193968	AX193968 Sequence
3	1036.2	91.9	1128	6	AR412275	AR412275 Sequence
4	1036.2	91.9	1128	6	AX193980	AX193980 Sequence
5	963.4	85.4	1128	6	AR412269	AR412269 Sequence
6	963.4	85.4	1128	6	AX193972	AX193972 Sequence
7	909	80.6	1128	6	AR412272	AR412272 Sequence
8	909	80.6	1128	6	AX193976	AX193976 Sequence
9	879	77.9	1128	6	AR412278	AR412278 Sequence
10	879	77.9	1128	6	AX193984	AX193984 Sequence
11	672.2	59.6	1138	6	AR412253	AR412253 Sequence
12	672.2	59.6	1138	6	AX193727	AX193727 Sequence
13	671.4	59.5	1158	6	AR412250	AR412250 Sequence
14	671.4	59.5	1158	6	AX193723	AX193723 Sequence
15	671.4	59.5	1161	6	AR412288	AR412288 Sequence
16	671.4	59.5	1161	6	AX194007	AX194007 Sequence
17	671.4	59.5	1161	8	AY033231	AY033231 Solanum c
18	652.4	57.8	1167	6	AR412284	AR412284 Sequence
19	652.4	57.8	1167	6	AX193992	AX193992 Sequence
20	619.8	54.9	1390	8	SBU09331	U09331 Solanum bre
21	618.2	54.8	1437	8	STRNA01	X01125 Potato mRNA
22	616	54.6	1167	6	AR412287	AR412287 Sequence
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25	608.4	53.9	1339	6	AR002974	AR002974 Sequence
26	608	53.9	1378	8	STPATB2	X13178 Potato mRNA
27	608	53.9	1380	6	AR002973	AR002973 Sequence
28	600	53.2	1354	8	STPATB1	X13179 Potato mRNA
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30	595	52.7	1405	8	AF498099	AF498099 Solanum c
31	390.6	34.6	1158	6	AR412279	AR412279 Sequence
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33	380.2	33.7	1440	8	NTU68484	U68484 Nicotiana t
34	210.2	18.6	1506	6	AX298155	AX298155 Sequence
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36	198	17.6	5313	8	STPATG	X03932 Solanum tub
37	190	16.8	4029	8	POTPATA	M18880 Potato pata
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39	186.2	16.5	1577	8	AF193067	AF193067 Vigna ung
40	185.6	16.5	1505	8	AF158253	AF158253 Nicotiana
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ALIGNMENTS

RESULT 1
AR412266
LOCUS AR412266 1128 bp DNA linear PAT 18-DEC-2003
DEFINITION Sequence 246 from patent US 6639054.
ACCESSION AR412266
VERSION AR412266.1 GI:40167064
KEYWORDS .
SOURCE Unknown.
ORGANISM Unknown.
Unclassified.
REFERENCE 1 (bases 1 to 1128)
AUTHORS Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
TITLE Preparation of deallergenized proteins and permuteins
JOURNAL Patent: US 6639054-A 246 28-OCT-2003;
FEATURES Location/Qualifiers
source 1. .1128
/organism="unknown"
/mol_type="genomic DNA"
ORIGIN

Query Match 100.0%; Score 1128; DB 6; Length 1128;
Best Local Similarity 100.0%; Pred. No. 1e-221;
Matches 1128; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

Qy        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180
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Db        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
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Qy        241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300
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RESULT 2
AX193968
LOCUS       AX193968               1128 bp    DNA     linear   PAT 15-AUG-2001
DEFINITION  Sequence 246 from Patent WO0149834.
ACCESSION   AX193968
VERSION     AX193968.1  GI:15211580
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            other sequences; artificial sequences.
REFERENCE   1
  AUTHORS   Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: WO 0149834-A 246 12-JUL-2001;
            MONSANTO COMPANY (US)
FEATURES             Location/Qualifiers
     source          1. .1128
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ORIGIN

  Query Match           100.0%;  Score 1128;  DB 6;  Length 1128;
  Best Local Similarity  100.0%;  Pred. No. 1e-221;
  Matches 1128;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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RESULT 3
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DEFINITION Sequence 258 from patent US 6639054.
ACCESSION AR412275
VERSION AR412275.1 GI:40167073
KEYWORDS .
SOURCE Unknown.
ORGANISM Unknown.
Unclassified.
REFERENCE 1 (bases 1 to 1128)
AUTHORS Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
TITLE Preparation of deallergenized proteins and permuteins
JOURNAL Patent: US 6639054-A 258 28-OCT-2003;
FEATURES Location/Qualifiers
source 1. .1128
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ORIGIN

Query Match 91.9%; Score 1036.2; DB 6; Length 1128;
Best Local Similarity 99.2%; Pred. No. 7.8e-203;
Matches 1041; Conservative 0; Mismatches 8; Indels 0; Gaps 0;

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Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
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Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
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Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
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Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
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Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
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Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
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Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
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Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059
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RESULT 4
AX193980
LOCUS AX193980 1128 bp DNA linear PAT 15-AUG-2001
DEFINITION Sequence 258 from Patent WO0149834.
ACCESSION AX193980
VERSION AX193980.1 GI:15211589
KEYWORDS .
SOURCE synthetic construct
ORGANISM synthetic construct
other sequences; artificial sequences.
REFERENCE 1
AUTHORS Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
TITLE Preparation of deallergenized proteins and permuteins
JOURNAL Patent: WO 0149834-A 258 12-JUL-2001;
MONSANTO COMPANY (US)
FEATURES Location/Qualifiers
source 1. .1128
/organism="synthetic construct"
/mol_type="unassigned DNA"
/db_xref="taxon:32630"
/note="Synthetic construct"
ORIGIN

Query Match 91.9%; Score 1036.2; DB 6; Length 1128;
Best Local Similarity 99.2%; Pred. No. 7.8e-203;
Matches 1041; Conservative 0; Mismatches 8; Indels 0; Gaps 0;

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Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
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Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
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Db          71 GTTAGTTATATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy         197 TACTGCTTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy         257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy         317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
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Db         251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy         377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
                 |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db         311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy         437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy         497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
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Db         431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy         557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
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Db         491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy         617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
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Db         551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy         677 TGCCAAAGAAATTGTACCTTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
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Db         611 TGCCAAAGAAATTGTACCTTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy         737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
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Db         671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy         797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
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Db         731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy         857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
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Db         791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy         917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
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Db         851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy         977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
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Db         911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy        1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
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Db         971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy        1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
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Db        1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059


RESULT 5
AR412269
LOCUS       AR412269               1128 bp    DNA     linear   PAT 18-DEC-2003
DEFINITION  Sequence 250 from patent US 6639054.
ACCESSION   AR412269
VERSION     AR412269.1  GI:40167067
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 1128)
  AUTHORS   Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: US 6639054-A 250 28-OCT-2003;
FEATURES             Location/Qualifiers
     source          1. .1128
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match           85.4%;  Score 963.4;  DB 6;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 7.3e-188;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
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Db         159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy          84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy         144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy         204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy         264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy         324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
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Db         459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy         384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
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Db         519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy         444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
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Db         579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy         504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
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Db         639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy         564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
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Db         699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy         624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
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Db         759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy         684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
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Db         819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy         744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
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Db         879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy         804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
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Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
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Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
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Db       1119 ACTTA 1123


RESULT 6
AX193972
LOCUS       AX193972                1128 bp    DNA     linear   PAT 15-AUG-2001
DEFINITION  Sequence 250 from Patent WO0149834.
ACCESSION   AX193972
VERSION     AX193972.1  GI:15211583
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            other sequences; artificial sequences.
REFERENCE   1
  AUTHORS   Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: WO 0149834-A 250 12-JUL-2001;
            MONSANTO COMPANY (US)
FEATURES             Location/Qualifiers
     source          1. .1128
                     /organism="synthetic construct"
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ORIGIN

  Query Match             85.4%;  Score 963.4;  DB 6;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 7.3e-188;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
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Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
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Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
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Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
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Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
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Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
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Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
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Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
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Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
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Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
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Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
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Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
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Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
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Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123


RESULT 7
AR412272
LOCUS       AR412272                1128 bp    DNA     linear   PAT 18-DEC-2003
DEFINITION  Sequence 254 from patent US 6639054.
ACCESSION   AR412272
VERSION     AR412272.1  GI:40167070
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 1128)
  AUTHORS   Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: US 6639054-A 254 28-OCT-2003;
FEATURES             Location/Qualifiers
     source          1. .1128
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match             80.6%;  Score 909;  DB 6;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-176;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
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Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
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Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
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Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
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Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
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Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
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Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
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Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
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Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
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Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
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Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
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Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
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Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
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Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
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Db       1113 TATGACATA 1121


RESULT 8
AX193976
LOCUS       AX193976               1128 bp    DNA     linear   PAT 15-AUG-2001
DEFINITION  Sequence 254 from Patent WO0149834.
ACCESSION   AX193976
VERSION     AX193976.1  GI:15211586
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            other sequences; artificial sequences.
REFERENCE   1
  AUTHORS   Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: WO 0149834-A 254 12-JUL-2001;
            MONSANTO COMPANY (US)
FEATURES             Location/Qualifiers
     source          1. .1128
                     /organism="synthetic construct"
                     /mol_type="unassigned DNA"
                     /db_xref="taxon:32630"
                     /note="Synthetic construct"
ORIGIN

  Query Match             80.6%;  Score 909;  DB 6;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-176;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
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Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
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Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
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Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
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Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
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Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
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Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
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Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
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Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
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Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
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Db       1113 TATGACATA 1121
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RESULT 9
AR412278
LOCUS       AR412278               1128 bp    DNA     linear   PAT 18-DEC-2003
DEFINITION  Sequence 262 from patent US 6639054.
ACCESSION   AR412278
VERSION     AR412278.1  GI:40167076
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 1128)
  AUTHORS   Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: US 6639054-A 262 28-OCT-2003;
FEATURES             Location/Qualifiers
     source          1. .1128
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  Query Match             77.9%;  Score 879;  DB 6;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 1.6e-170;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
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Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
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Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
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Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
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Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
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Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
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Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
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Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
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Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
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Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
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Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
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Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
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Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAAATATGAGTTCAA 1018
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Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
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Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
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Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900


RESULT 10
AX193984
LOCUS       AX193984               1128 bp    DNA     linear   PAT 15-AUG-2001
DEFINITION  Sequence 262 from Patent WO0149834.
ACCESSION   AX193984
VERSION     AX193984.1  GI:15211592
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            other sequences; artificial sequences.
REFERENCE   1
  AUTHORS   Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: WO 0149834-A 262 12-JUL-2001;
            MONSANTO COMPANY (US)
FEATURES             Location/Qualifiers
     source          1. .1128
                     /organism="synthetic construct"
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ORIGIN

  Query Match             77.9%;  Score 879;  DB 6;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 1.6e-170;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
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Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
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Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
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Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
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Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
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Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
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Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
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Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
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Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
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Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
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RESULT 11
AR412253
LOCUS       AR412253               1138 bp    DNA     linear   PAT 18-DEC-2003
DEFINITION  Sequence 5 from patent US 6639054.
ACCESSION   AR412253
VERSION     AR412253.1  GI:40167051
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 1138)
  AUTHORS   Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: US 6639054-A 5 28-OCT-2003;
FEATURES             Location/Qualifiers
     source          1. .1138
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ORIGIN

  Query Match           59.6%;  Score 672.2;  DB 6;  Length 1138;
  Best Local Similarity   99.6%;  Pred. No. 5.5e-128;
  Matches  674;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

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Db         25 AGCTCAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 84

Qy        509 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 568
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Db         85 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 144

Qy        569 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 628
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Db        145 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 204

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Db        205 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 264

Qy        689 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 748
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Db        265 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 324

Qy        749 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 808
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Db        325 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 384

Qy        809 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 868
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        385 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 444

Qy        869 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 928
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Db        445 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 504

Qy        929 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 988
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Db        505 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 564

Qy        989 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 1048
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        565 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 624

Qy       1049 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 1108
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Qy       1109 TGCTTCAATTAGGTAAT 1125
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Db        685 TGCTTCAATTAGGTCAT 701


RESULT 12
AX193727
LOCUS       AX193727               1138 bp    DNA     linear   PAT 15-AUG-2001
DEFINITION  Sequence 5 from Patent WO0149834.
ACCESSION   AX193727
VERSION     AX193727.1  GI:15211567
KEYWORDS    .
SOURCE      synthetic construct
  ORGANISM  synthetic construct
            other sequences; artificial sequences.
REFERENCE   1
  AUTHORS   Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: WO 0149834-A 5 12-JUL-2001;
            MONSANTO COMPANY (US)
FEATURES             Location/Qualifiers
     source          1. .1138
                     /organism="synthetic construct"
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ORIGIN

  Query Match           59.6%;  Score 672.2;  DB 6;  Length 1138;
  Best Local Similarity   99.6%;  Pred. No. 5.5e-128;
  Matches  674;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy        449 AGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 508
              ||  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         25 AGCTCAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 84

Qy        509 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 568
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Db         85 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 144

Qy        569 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 628
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Db        145 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 204

Qy        629 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 688
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Db        205 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 264

Qy        689 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 748
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Db        265 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 324
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Qy        749 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 808
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Db        325 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 384

Qy        809 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 868
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Db        385 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 444

Qy        869 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 928
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Db        445 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 504

Qy        929 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 988
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Db        505 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 564

Qy        989 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 1048
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Qy       1049 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 1108
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Qy       1109 TGCTTCAATTAGGTAAT 1125
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RESULT 13
AR412250
LOCUS AR412250 1158 bp DNA linear PAT 18-DEC-2003
DEFINITION Sequence 1 from patent US 6639054.
ACCESSION AR412250
VERSION AR412250.1 GI:40167048
KEYWORDS .
SOURCE Unknown.
ORGANISM Unknown.
Unclassified.
REFERENCE 1 (bases 1 to 1158)
AUTHORS Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
TITLE Preparation of deallergenized proteins and permuteins
JOURNAL Patent: US 6639054-A 1 28-OCT-2003;
FEATURES Location/Qualifiers
source 1. .1158
/organism="unknown"
/mol_type="genomic DNA"
ORIGIN

Query Match 59.5%; Score 671.4; DB 6; Length 1158;
Best Local Similarity 99.9%; Pred. No. 8e-128;
Matches 672; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
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Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
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Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
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Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
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Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369
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Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
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Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
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Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742
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RESULT 14
AX193723
LOCUS AX193723 1158 bp DNA linear PAT 15-AUG-2001
DEFINITION Sequence 1 from Patent WO0149834.
ACCESSION AX193723
VERSION AX193723.1 GI:15211564
KEYWORDS .
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1
AUTHORS Alibhai,M.F., Astwood,J.D., Mcwherter,C.A. and Sampson,H.A.
TITLE Preparation of deallergenized proteins and permuteins
JOURNAL Patent: WO 0149834-A 1 12-JUL-2001;
MONSANTO COMPANY (US)
FEATURES Location/Qualifiers
source 1. .1158
/organism="Solanum tuberosum"
/mol_type="unassigned DNA"
/db_xref="taxon:4113"
ORIGIN

Query Match 59.5%; Score 671.4; DB 6; Length 1158;
Best Local Similarity 99.9%; Pred. No. 8e-128;
Matches 672; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
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Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
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Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
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Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
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Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309
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Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
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Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
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Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
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Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
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Db        730 TCAATTAGGTCAT 742
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RESULT 15
AR412288
LOCUS       AR412288               1161 bp    DNA     linear   PAT 18-DEC-2003
DEFINITION  Sequence 285 from patent US 6639054.
ACCESSION   AR412288
VERSION     AR412288.1  GI:40167086
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 1161)
  AUTHORS   Alibhai,M.F., Astwood,J.D., McWherter,C.A. and Sampson,H.A.
  TITLE     Preparation of deallergenized proteins and permuteins
  JOURNAL   Patent: US 6639054-A 285 28-OCT-2003;
FEATURES             Location/Qualifiers
     source          1. .1161
                     /organism="unknown"
                     /mol_type="genomic DNA"
ORIGIN

  Query Match             59.5%;  Score 671.4;  DB 6;  Length 1161;
  Best Local Similarity   99.9%;  Pred. No. 8e-128;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;
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Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
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Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309
```

```
Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
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Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742
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Job time : 4945 secs

GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

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Title: US-10-658-180-246
Perfect score: 1128
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Scoring table: IDENTITY_NUC
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Searched: 4390206 seqs, 2959870667 residues

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Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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2	1128	100.0	1128	12	ADM93059	Adm93059 Permutein
3	1036.2	91.9	1128	4	AAH73841	Aah73841 Permutein
4	1036.2	91.9	1128	12	ADM93065	Adm93065 Permutein
5	963.4	85.4	1128	4	AAH73835	Aah73835 Permutein
6	963.4	85.4	1128	12	ADM93061	Adm93061 Permutein
7	909	80.6	1128	4	AAH73838	Aah73838 Permutein
8	909	80.6	1128	12	ADM93063	Adm93063 Permutein
9	879	77.9	1128	4	AAH73844	Aah73844 Permutein
10	879	77.9	1128	12	ADM93067	Adm93067 Permutein
11	672.2	59.6	1138	4	AAH73819	Aah73819 Thermal a
12	671.4	59.5	1158	4	AAH73816	Aah73816 Potato pa
13	671.4	59.5	1158	12	ADM93077	Adm93077 Potato pa
14	671.4	59.5	1161	4	AAH73854	Aah73854 Patatin h
15	671.4	59.5	1161	12	ADM93076	Adm93076 Heartleaf
16	671.4	59.5	1172	2	AAQ72601	Aaq72601 Plant ins
17	666.2	59.1	1106	2	AAQ72602	Aaq72602 Plant ins
18	652.4	57.8	1167	4	AAH73850	Aah73850 Permutein
19	652.4	57.8	1167	12	ADM93071	Adm93071 Permutein
20	618.2	54.8	1106	2	AAQ72610	Aaq72610 Insectici
21	616	54.6	1167	4	AAH73853	Aah73853 Permutein
22	616	54.6	1167	12	ADM93073	Adm93073 Permutein
23	613.4	54.4	1172	2	AAQ72608	Aaq72608 Insectici
24	610.8	54.1	1172	2	AAQ72611	Aaq72611 Insectici
25	608.6	54.0	1106	2	AAQ72615	Aaq72615 Insectici
26	608.6	54.0	1106	2	AAQ72612	Aaq72612 Insectici
27	608.4	53.9	1175	2	AAQ72609	Aaq72609 Insectici
28	608.4	53.9	1339	2	AAQ68892	Aaq68892 Patatin c
29	608.4	53.9	1339	2	AAV53682	Aav53682 Nucleotid
30	608	53.9	1171	2	AAQ72606	Aaq72606 Insectici
31	608	53.9	1172	2	AAQ72617	Aaq72617 Insectici
32	608	53.9	1172	2	AAQ72614	Aaq72614 Insectici
33	608	53.9	1380	2	AAQ68891	Aaq68891 Patatin c
34	608	53.9	1380	2	AAV53681	Aav53681 Nucleotid
35	607	53.8	1104	2	AAQ72616	Aaq72616 Insectici
36	607	53.8	1105	2	AAQ72607	Aaq72607 Insectici
37	606.8	53.8	1109	2	AAQ72613	Aaq72613 Insectici
38	594.8	52.7	1172	2	AAQ72620	Aaq72620 Insectici
39	583.6	51.7	1172	2	AAQ72621	Aaq72621 Insectici
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42	390.6	34.6	1158	12	ADM93069	Adm93069 Permutein
43	390.6	34.6	1164	2	AAQ72603	Aaq72603 Plant ins
44	210.2	18.6	1506	6	ABA01415	Aba01415 Nicotiana
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ALIGNMENTS

RESULT 1
AAH73832
ID AAH73832 standard; DNA; 1128 BP.
XX
AC AAH73832;
XX
DT 28-SEP-2001 (first entry)
XX
DE Permutein protein coding sequence #1.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Example 7; Page 182-183; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional

```
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

  Query Match           100.0%;  Score 1128;  DB 4;  Length 1128;
  Best Local Similarity  100.0%;  Pred. No. 2.7e-291;
  Matches 1128;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60

Qy         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120
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Db         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

Qy        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180
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Db        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240

Qy        241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300
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Qy        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360
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Db        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

Qy        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420
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Db        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
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              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540

Qy        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660

Qy        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960

Qy        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
              |||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128


RESULT 2
ADM93059
ID   ADM93059 standard; DNA; 1128 BP.
XX
AC   ADM93059;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein plasmid DNA #1.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   P-PSDB; ADM93060.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 20; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents permutein plasmid DNA.
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

  Query Match           100.0%;  Score 1128;  DB 12;  Length 1128;
  Best Local Similarity  100.0%;  Pred. No. 2.7e-291;
  Matches 1128;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60

Qy         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

Qy        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240

Qy        241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300

Qy        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

Qy        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480

Qy        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540

Qy        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660

Qy        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960

Qy        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
              |||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128


RESULT 3
AAH73841
ID   AAH73841 standard; DNA; 1128 BP.
XX
AC   AAH73841;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein coding sequence #4.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Example 10; Page 190; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 228 G; 326 T; 0 U; 0 Other;

  Query Match           91.9%;  Score 1036.2;  DB 4;  Length 1128;
  Best Local Similarity  99.2%;  Pred. No. 9.9e-267;
  Matches 1041;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||    ||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430
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Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059
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RESULT 4
ADM93065
ID ADM93065 standard; DNA; 1128 BP.
XX
AC ADM93065;
XX
DT 03-JUN-2004 (first entry)
XX
DE Permutein plasmid DNA #4.
XX
KW lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW insect control; nutritional supplement; ds; permutein.
XX
OS Synthetic.
XX
PN US6657046-B1.
XX
PD 02-DEC-2003.
XX
PF 05-JAN-2001; 2001US-00755274.
XX
PR 06-JAN-2000; 2000US-0174669P.
PR 21-JUL-2000; 2000US-0219912P.
XX
PA (MONS) MONSANTO TECHNOLOGY LLC.
XX
PI Alibhai MF, Rydel TJ;
XX
DR WPI; 2004-058368/06.
DR P-PSDB; ADM93066.
XX
PT New lipid acyl hydrolase proteins, useful for inhibiting insect
PT infestation of a plant or plant part, for controlling insects, as
PT nutritional supplements, or in immunotherapy protocols.
XX
PS Example 6; SEQ ID NO 26; 73pp; English.
XX
CC The invention relates to an isolated peptide exhibiting lipid acyl
CC hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC as nutritional supplements, and in immunotherapy protocols. The present
CC sequence represents permutein plasmid DNA.
XX
SQ Sequence 1128 BP; 372 A; 202 C; 228 G; 326 T; 0 U; 0 Other;

Query Match 91.9%; Score 1036.2; DB 12; Length 1128;
Best Local Similarity 99.2%; Pred. No. 9.9e-267;
Matches 1041; Conservative 0; Mismatches 8; Indels 0; Gaps 0;

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Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||     ||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              |||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059
```

RESULT 5
AAH73835
ID AAH73835 standard; DNA; 1128 BP.
XX
AC AAH73835;
XX
DT 28-SEP-2001 (first entry)
XX
DE Permutein protein coding sequence #2.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Example 8; Page 185; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

Query Match 85.4%; Score 963.4; DB 4; Length 1128;
Best Local Similarity 99.9%; Pred. No. 3e-247;

Matches 964; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123
```

RESULT 6
ADM93061

```
ID   ADM93061 standard; DNA; 1128 BP.
XX
AC   ADM93061;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein plasmid DNA #2.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   P-PSDB; ADM93062.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 22; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents permutein plasmid DNA.
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

  Query Match            85.4%;  Score 963.4;  DB 12;  Length 1128;
  Best Local Similarity  99.9%;  Pred. No. 3e-247;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              |||| |
Db       1119 ACTTA 1123


RESULT 7
AAH73838
ID   AAH73838 standard; DNA; 1128 BP.
XX
AC   AAH73838;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein coding sequence #3.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
```

```
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Example 9; Page 187-188; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

  Query Match             80.6%;  Score 909;  DB 4;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-232;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy          84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy         144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy         204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy         264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy         324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy         384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy         444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy         504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy         564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy         624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy         684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy         744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy         804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy         864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy         924 TATGACATA 932
               |||||||||
Db        1113 TATGACATA 1121


RESULT 8
ADM93063
ID   ADM93063 standard; DNA; 1128 BP.
XX
AC   ADM93063;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein plasmid DNA #3.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   P-PSDB; ADM93064.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 24; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents permutein plasmid DNA.
XX
SQ   Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

  Query Match             80.6%;  Score 909;  DB 12;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-232;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy          84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332
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Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121
```

RESULT 9
AAH73844
ID AAH73844 standard; DNA; 1128 BP.
XX
AC AAH73844;
XX
DT 28-SEP-2001 (first entry)
XX
DE Permutein protein coding sequence #5.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Example 11; Page 192-193; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

Query Match 77.9%; Score 879; DB 4; Length 1128;
Best Local Similarity 99.4%; Pred. No. 1.2e-224;
Matches 882; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

```
Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
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Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900
```

RESULT 10
ADM93067
ID ADM93067 standard; DNA; 1128 BP.
XX
AC ADM93067;
XX
DT 03-JUN-2004 (first entry)
XX
DE Permutein plasmid DNA #5.
XX
KW lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW insect control; nutritional supplement; ds; permutein.
XX
OS Synthetic.
XX
PN US6657046-B1.
XX
PD 02-DEC-2003.
XX
PF 05-JAN-2001; 2001US-00755274.
XX
PR 06-JAN-2000; 2000US-0174669P.
PR 21-JUL-2000; 2000US-0219912P.
XX
PA (MONS) MONSANTO TECHNOLOGY LLC.
XX
PI Alibhai MF, Rydel TJ;
XX
DR WPI; 2004-058368/06.
DR P-PSDB; ADM93068.
XX
PT New lipid acyl hydrolase proteins, useful for inhibiting insect
PT infestation of a plant or plant part, for controlling insects, as
PT nutritional supplements, or in immunotherapy protocols.
XX
PS Example 6; SEQ ID NO 28; 73pp; English.
XX
CC The invention relates to an isolated peptide exhibiting lipid acyl
CC hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC as nutritional supplements, and in immunotherapy protocols. The present
CC sequence represents permutein plasmid DNA.
XX
SQ Sequence 1128 BP; 372 A; 202 C; 229 G; 325 T; 0 U; 0 Other;

Query Match 77.9%; Score 879; DB 12; Length 1128;
Best Local Similarity 99.4%; Pred. No. 1.2e-224;
Matches 882; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

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Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900
```

RESULT 11
AAH73819
ID AAH73819 standard; DNA; 1138 BP.
XX
AC AAH73819;
XX
DT 28-SEP-2001 (first entry)
XX
DE Thermal amplification primer #3.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; PCR primer;

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KW   allergenicity; larva growth; lipid acyl hydrolase; insecticide; ss.
XX
OS   Synthetic.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Example 5; Page 135-136; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence is a PCR
CC   primer, which was used in an example from the present invention
XX
SQ   Sequence 1138 BP; 374 A; 206 C; 229 G; 329 T; 0 U; 0 Other;

  Query Match             59.6%;  Score 672.2;  DB 4;  Length 1138;
  Best Local Similarity   99.6%;  Pred. No. 2.6e-169;
  Matches  674;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy        449 AGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 508
              ||  |||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         25 AGCTCAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 84

Qy        509 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 568
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         85 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 144

Qy        569 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 628
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        145 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 204

Qy        629 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 688
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        205 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 264

Qy        689 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 748
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        265 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 324

Qy        749 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 808
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        325 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 384

Qy        809 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 868
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        385 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 444

Qy        869 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 928
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        445 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 504

Qy        929 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 988
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        505 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 564

Qy        989 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 1048
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        565 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 624

Qy       1049 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 1108
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        625 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 684

Qy       1109 TGCTTCAATTAGGTAAT 1125
              ||||||||||||||| ||
Db        685 TGCTTCAATTAGGTCAT 701


RESULT 12
AAH73816
ID   AAH73816 standard; DNA; 1158 BP.
XX
AC   AAH73816;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Potato patatin coding sequence.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS   Solanum tuberosum.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
DR   P-PSDB; AAG99079.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Example 5; Page 133-134; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 1158 BP; 380 A; 207 C; 221 G; 350 T; 0 U; 0 Other;

  Query Match             59.5%;  Score 671.4;  DB 4;  Length 1158;
  Best Local Similarity   99.9%;  Pred. No. 4.2e-169;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129
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Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
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Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
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Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742
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RESULT 13
ADM93077
ID ADM93077 standard; DNA; 1158 BP.
XX
AC ADM93077;
XX
DT 03-JUN-2004 (first entry)
XX
DE Potato patatin DNA.
XX
KW lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW insect control; nutritional supplement; potato; patatin; ds; gene.
XX
OS Solanum tuberosum.
XX
PN US6657046-B1.
XX
PD 02-DEC-2003.
XX
PF 05-JAN-2001; 2001US-00755274.
XX
PR 06-JAN-2000; 2000US-0174669P.
PR 21-JUL-2000; 2000US-0219912P.
XX
PA (MONS) MONSANTO TECHNOLOGY LLC.
XX
PI Alibhai MF, Rydel TJ;
XX
DR WPI; 2004-058368/06.
DR P-PSDB; ADM93078.
XX
PT New lipid acyl hydrolase proteins, useful for inhibiting insect
PT infestation of a plant or plant part, for controlling insects, as
PT nutritional supplements, or in immunotherapy protocols.
XX
PS Disclosure; SEQ ID NO 38; 73pp; English.
XX
CC The invention relates to an isolated peptide exhibiting lipid acyl
CC hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC as nutritional supplements, and in immunotherapy protocols. The present
CC sequence represents a potato patatin DNA.
XX
SQ Sequence 1158 BP; 380 A; 207 C; 221 G; 350 T; 0 U; 0 Other;

  Query Match   59.5%; Score 671.4; DB 12; Length 1158;
  Best Local Similarity 99.9%; Pred. No. 4.2e-169;
  Matches 672; Conservative   0; Mismatches   1; Indels   0; Gaps   0;

```
Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
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Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
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Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
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Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
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Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
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Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
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Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
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Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742
```

RESULT 14

```
AAH73854
ID   AAH73854 standard; DNA; 1161 BP.
XX
AC   AAH73854;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Patatin homolog Pat17 coding sequence.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide; ds.
XX
OS   Solanum tuberosum.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Disclosure; Page 210-211; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 1161 BP; 382 A; 207 C; 221 G; 351 T; 0 U; 0 Other;

  Query Match           59.5%;  Score 671.4;  DB 4;  Length 1161;
  Best Local Similarity   99.9%;  Pred. No. 4.2e-169;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
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Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742


RESULT 15
ADM93076
ID   ADM93076 standard; DNA; 1161 BP.
XX
AC   ADM93076;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Heartleaf nightshade patatin homologue Pat17 DNA.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; heartleaf nightshade; patatin;
KW   Pat17; ds; gene.
XX
OS   Solanum cardiophyllum.
XX
FH   Key             Location/Qualifiers
FT   CDS             1. .1161
FT                   /*tag=  a
FT                   /product= "Pat17"
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   P-PSDB; ADM93040.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 1; SEQ ID NO 37; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
```

```
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the heartleaf nightshade patatin homologue Pat17 DNA.
XX
SQ   Sequence 1161 BP; 382 A; 207 C; 221 G; 351 T; 0 U; 0 Other;

  Query Match             59.5%;  Score 671.4;  DB 12;  Length 1161;
  Best Local Similarity   99.9%;  Pred. No. 4.2e-169;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
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Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
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Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
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Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
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Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
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Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
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Db        730 TCAATTAGGTCAT 742


Search completed: April  8, 2005, 13:47:26
Job time : 663 secs
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GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

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(without alignments)
11890.472 Million cell updates/sec

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Scoring table: IDENTITY_NUC
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Searched: 34239544 seqs, 19032134700 residues

Total number of hits satisfying chosen parameters: 68479088

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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7: gb_est6:*
8: gb_gss1:*
9: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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1	619.8	54.9	813	4	BG351670	BG351670 130E12 Ma
2	619.8	54.9	836	7	CV471981	CV471981 45241.1 C
3	619.8	54.9	893	7	CV471846	CV471846 45073.1 C
4	619.8	54.9	908	7	CV472569	CV472569 45932.1 C
5	619.8	54.9	950	7	CV470623	CV470623 43531.1 C
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7	618.8	54.9	736	4	BG351688	BG351688 131A01 Ma
8	618.2	54.8	756	4	BG887880	BG887880 EST513731
9	618.2	54.8	802	4	BG351001	BG351001 099E05 Ma
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11	617.4	54.7	819	7	CV469997	CV469997 42774.1 C
12	617.2	54.7	741	4	BG351249	BG351249 088C08 Ma
13	616.8	54.7	700	4	BG351792	BG351792 132G04 Ma
14	616.6	54.7	781	4	BG887154	BG887154 EST513005
15	616.4	54.6	795	7	CV286460	CV286460 66740.1 A
16	616.4	54.6	799	7	CV470839	CV470839 43787.1 C
17	616.4	54.6	808	7	CV470073	CV470073 42867.1 C
18	616.4	54.6	815	7	CV470351	CV470351 43196.1 C
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21	616.4	54.6	909	7	CV471819	CV471819 45044.1 C
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25	614.8	54.5	849	7	CV472622	CV472622 45993.1 C
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36	609.6	54.0	780	7	CV472434	CV472434 45776.1 C
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44	608.6	54.0	812	7	CV468931	CV468931 41376.1 C
45	608.6	54.0	888	7	CV470978	CV470978 43946.1 C

ALIGNMENTS

RESULT 1
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DEFINITION 130E12 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA sequence.
ACCESSION BG351670
VERSION BG351670.1 GI:13180412
KEYWORDS EST.
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1 (bases 1 to 813)
AUTHORS Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
TITLE The potato tuber transcriptome: analysis of 6077 expressed sequence tags
JOURNAL FEBS Lett. 506 (2), 123-126 (2001)
MEDLINE 21475600
PUBMED 11591384
COMMENT Contact: Karen G. Welinder
Institut for bioteknologi
Aalborg Universitet
Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
Tel: +45 96358467
Fax: +45 98141808
Email: kgw@bio.auc.dk
Sequenced from the 5' end.
High quality sequence stop: 813
POLYA=No.
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/note="Vector: Lambda ZAP"
ORIGIN

Query Match 54.9%; Score 619.8; DB 4; Length 813;
Best Local Similarity 95.2%; Pred. No. 1.2e-150;
Matches 639; Conservative 0; Mismatches 32; Indels 0; Gaps 0;

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Db         74 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 133

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||||||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        134 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 193

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 253

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        254 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 313

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        314 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 373

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        374 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 433

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        434 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 493

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| |
Db        494 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 553

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||||||||||||||| |||||||||||||||| |||||||
Db        554 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 613

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
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Db        614 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 673

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||| |||||||||  |||||||  |||||||||
Db        674 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 733

Qy       1115 AATTAGGTAAT 1125
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Db        734 AATTAAGTCAT 744


RESULT 2
CV471981
LOCUS       CV471981                836 bp    mRNA    linear   EST 01-OCT-2004
DEFINITION  45241.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone
            45241 5', mRNA sequence.
ACCESSION   CV471981
VERSION     CV471981.1  GI:53696757
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 836)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from common scab-challenged potato tubers
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
     source          1. .836
                     /organism="Solanum tuberosum"
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                     /clone_lib="Common Scab-Challenged Tubers"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Pathogen-challenge series. Tubers
                     from pathogen-free Solanum tuberosum var. Shepody, clone
                     1756, were inoculated with Streptomyces scabei EF-35, by
                     applying 1 ml of a spore stock (OD650 = 0.7). Tubers were
                     placed in trays of sand and watered from the bottom for
                     the remainder of the experiment. Inoculated tubers were
                     sampled at 2 days, 1 week, 2 weeks and 4 weeks
                     post-infection. Harvested tubers were washed in distilled
                     water, blotted dry, cut into small pieces and frozen in
                     liquid nitrogen. RNA was isolated from each sample
                     collection, pooled and used for cDNA library
                     construction."
ORIGIN

  Query Match             54.9%;  Score 619.8;  DB 7;  Length 836;
  Best Local Similarity   95.2%;  Pred. No. 1.2e-150;
  Matches  639;  Conservative    0;  Mismatches   32;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         89 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 148

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        149 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 208

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        209 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 268

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        269 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 328

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        329 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 388

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        389 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 448

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        449 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 508

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||||| ||||||||||||||||||||||||||||||||| |
Db        509 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 568

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
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Db        569 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 628

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
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Db        629 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 688

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||| |||||||||  |||||||  |||||||||
Db        689 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 748

Qy       1115 AATTAGGTAAT 1125
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Db        749 AATTAAGTCAT 759
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RESULT 3
CV471846
LOCUS       CV471846                893 bp    mRNA    linear   EST 01-OCT-2004
DEFINITION  45073.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone
            45073 5', mRNA sequence.
ACCESSION   CV471846
VERSION     CV471846.1  GI:53696622
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 893)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from common scab-challenged potato tubers
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
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                     /mol_type="mRNA"
                     /cultivar="Shepody"
                     /db_xref="taxon:4113"
                     /clone="45073"
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                     /lab_host="XL10-Gold"
                     /clone_lib="Common Scab-Challenged Tubers"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Pathogen-challenge series. Tubers
                     from pathogen-free Solanum tuberosum var. Shepody, clone
                     1756, were inoculated with Streptomyces scabei EF-35, by
                     applying 1 ml of a spore stock (OD650 = 0.7). Tubers were
                     placed in trays of sand and watered from the bottom for
                     the remainder of the experiment. Inoculated tubers were
                     sampled at 2 days, 1 week, 2 weeks and 4 weeks
                     post-infection. Harvested tubers were washed in distilled
                     water, blotted dry, cut into small pieces and frozen in
                     liquid nitrogen. RNA was isolated from each sample
                     collection, pooled and used for cDNA library
                     construction."
ORIGIN

  Query Match             54.9%;  Score 619.8;  DB 7;  Length 893;
  Best Local Similarity   95.2%;  Pred. No. 1.2e-150;
  Matches  639;  Conservative    0;  Mismatches   32;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
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Db         76 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 135

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        136 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 195

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        196 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 255

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              ||||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        256 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 315

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        316 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 375

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        376 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 435

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        436 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 495

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||| |||||||||||||||||||||||||||||||||| |
Db        496 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 555

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
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Db        556 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 615

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
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Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
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Db        676 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 735

Qy       1115 AATTAGGTAAT 1125
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Db        736 AATTAAGTCAT 746


RESULT 4
CV472569
LOCUS       CV472569                908 bp    mRNA    linear   EST 01-OCT-2004
DEFINITION  45932.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone
            45932 5', mRNA sequence.
ACCESSION   CV472569
VERSION     CV472569.1  GI:53697345
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 908)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from common scab-challenged potato tubers
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
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                     /cultivar="Shepody"
                     /db_xref="taxon:4113"
                     /clone="45932"
                     /tissue_type="Tubers"
                     /lab_host="XL10-Gold"
                     /clone_lib="Common Scab-Challenged Tubers"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Pathogen-challenge series. Tubers
                     from pathogen-free Solanum tuberosum var. Shepody, clone
                     1756, were inoculated with Streptomyces scabei EF-35, by
                     applying 1 ml of a spore stock (OD650 = 0.7). Tubers were
                     placed in trays of sand and watered from the bottom for
                     the remainder of the experiment. Inoculated tubers were
                     sampled at 2 days, 1 week, 2 weeks and 4 weeks
                     post-infection. Harvested tubers were washed in distilled
                     water, blotted dry, cut into small pieces and frozen in
```

liquid nitrogen. RNA was isolated from each sample collection, pooled and used for cDNA library construction."
ORIGIN

Query Match 54.9%; Score 619.8; DB 7; Length 908;
Best Local Similarity 95.2%; Pred. No. 1.2e-150;
Matches 639; Conservative 0; Mismatches 32; Indels 0; Gaps 0;

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Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         52 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 111

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
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Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
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Db        172 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 231

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
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Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
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Db        292 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 351

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              ||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||||
Db        352 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 411

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
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Db        412 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 471

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
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Db        472 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 531

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
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Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
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Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
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Db        652 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 711

Qy       1115 AATTAGGTAAT 1125
              ||||| || ||
Db        712 AATTAAGTCAT 722
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RESULT 5
CV470623
LOCUS CV470623 950 bp mRNA linear EST 01-OCT-2004
DEFINITION 43531.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone 43531 5', mRNA sequence.
ACCESSION CV470623
VERSION CV470623.1 GI:53695399
KEYWORDS EST.
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1 (bases 1 to 950)
AUTHORS Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
TITLE Generation of ESTs from common scab-challenged potato tubers
JOURNAL Unpublished (2004)
COMMENT Contact: Barry Flinn
The Canadian Potato Genome Project - BioAtlantech
921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
Email: bflinn@bioatlantech.nb.ca
Seq primer: T3.
FEATURES Location/Qualifiers
source 1. .950
/organism="Solanum tuberosum"
/mol_type="mRNA"
/cultivar="Shepody"
/db_xref="taxon:4113"
/clone="43531"
/tissue_type="Tubers"
/lab_host="XL10-Gold"
/clone_lib="Common Scab-Challenged Tubers"
/note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI; Site_2: XhoI; supplier: Pathogen-challenge series. Tubers from pathogen-free Solanum tuberosum var. Shepody, clone 1756, were inoculated with Streptomyces scabei EF-35, by applying 1 ml of a spore stock (OD650 = 0.7). Tubers were placed in trays of sand and watered from the bottom for the remainder of the experiment. Inoculated tubers were sampled at 2 days, 1 week, 2 weeks and 4 weeks post-infection. Harvested tubers were washed in distilled water, blotted dry, cut into small pieces and frozen in liquid nitrogen. RNA was isolated from each sample collection, pooled and used for cDNA library construction."
ORIGIN

Query Match 54.9%; Score 619.8; DB 7; Length 950;
Best Local Similarity 95.2%; Pred. No. 1.2e-150;
Matches 639; Conservative 0; Mismatches 32; Indels 0; Gaps 0;

```
Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         68 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 127

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        128 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 187

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
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Db        188 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 247

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| ||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        248 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 307

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
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Db        308 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 367

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              ||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||||
Db        368 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 427

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        428 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 487

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||||| |||||||||||||||||||||||||||||||||| |
Db        488 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 547

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||||||||||||||||||| |||||||||||||| |||||||
Db        548 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 607
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```
Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||
Db        608 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 667

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||||| |||||||||| ||||||| |||||||||
Db        668 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 727

Qy       1115 AATTAGGTAAT 1125
              ||||| || ||
Db        728 AATTAAGTCAT 738


RESULT 6
CV469887
LOCUS       CV469887               973 bp    mRNA    linear   EST 01-OCT-2004
DEFINITION  42645.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone
            42645 5', mRNA sequence.
ACCESSION   CV469887
VERSION     CV469887.1  GI:53694663
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 973)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from common scab-challenged potato tubers
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
     source          1. .973
                     /organism="Solanum tuberosum"
                     /mol_type="mRNA"
                     /cultivar="Shepody"
                     /db_xref="taxon:4113"
                     /clone="42645"
                     /tissue_type="Tubers"
                     /lab_host="XL10-Gold"
                     /clone_lib="Common Scab-Challenged Tubers"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Pathogen-challenge series. Tubers
                     from pathogen-free Solanum tuberosum var. Shepody, clone
                     1756, were inoculated with Streptomyces scabei EF-35, by
                     applying 1 ml of a spore stock (OD650 = 0.7). Tubers were
                     placed in trays of sand and watered from the bottom for
                     the remainder of the experiment. Inoculated tubers were
                     sampled at 2 days, 1 week, 2 weeks and 4 weeks
                     post-infection. Harvested tubers were washed in distilled
                     water, blotted dry, cut into small pieces and frozen in
                     liquid nitrogen. RNA was isolated from each sample
                     collection, pooled and used for cDNA library
                     construction."
ORIGIN

  Query Match           54.9%;  Score 619.8;  DB 7;  Length 973;
  Best Local Similarity   95.2%;  Pred. No. 1.2e-150;
  Matches  639;  Conservative    0;  Mismatches   32;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              |||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         68 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 127

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        128 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 187

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 247

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              ||||||| ||||||||||||||||||||||||||||||||||||||||||| |||||||
Db        248 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 307

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||| ||||||||| |||||||  |||||| |||||||
Db        308 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 367

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              ||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||||
Db        368 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 427

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              ||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        428 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 487

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||| ||||||||||||||||||||||||||||||||| |
Db        488 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 547

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||||||||||||||||||||||| |||||||||||||||
Db        548 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 607

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||
Db        608 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 667

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||||| |||||||||| ||||||| |||||||||
Db        668 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 727

Qy       1115 AATTAGGTAAT 1125
              ||||| || ||
Db        728 AATTAAGTCAT 738


RESULT 7
BG351688
LOCUS       BG351688               736 bp    mRNA    linear   EST 11-SEP-2002
DEFINITION  131A01 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA
            sequence.
ACCESSION   BG351688
VERSION     BG351688.1  GI:13180430
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 736)
  AUTHORS   Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
  TITLE     The potato tuber transcriptome: analysis of 6077 expressed sequence
            tags
  JOURNAL   FEBS Lett. 506 (2), 123-126 (2001)
  MEDLINE   21475600
   PUBMED   11591384
COMMENT     Contact: Karen G. Welinder
            Institut for bioteknologi
            Aalborg Universitet
            Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
            Tel: +45 96358467
            Fax: +45 98141808
            Email: kgw@bio.auc.dk
            Sequenced from the 5' end.
            High quality sequence stop: 736
            POLYA=No.
FEATURES             Location/Qualifiers
     source          1. .736
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                     /organism="Solanum tuberosum"
                     /mol_type="mRNA"
                     /cultivar="Field grown Kuras"
                     /db_xref="taxon:4113"
                     /tissue_type="Tuber"
                     /clone_lib="Mature tuber lambda ZAP"
                     /note="Vector: Lambda ZAP"
ORIGIN

  Query Match             54.9%;  Score 618.8;  DB 4;  Length 736;
  Best Local Similarity   95.2%;  Pred. No. 2.1e-150;
  Matches  638;  Conservative    0;  Mismatches   32;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         67 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 126

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||||||||||||||||||||||||||||||||||||||||||| |||||||||||  ||||||
Db        127 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 186

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        187 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 246

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              ||||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        247 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 306

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| |||||||| |||||| |||||||
Db        307 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 366

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        367 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 426

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        427 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 486

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||| |||||||||||||||||||||||||||||||||||| |
Db        487 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 546

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||||||||||| |||||||||||||| |||||||
Db        547 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 606

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||||||| |||||||||||||||||||||||||||||||||||||||||| ||||||
Db        607 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 666

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||| |||||||||| |||||| |||||||||
Db        667 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 726

Qy       1115 AATTAGGTAA 1124
              ||||| || |
Db        727 AATTAAGTCA 736


RESULT 8
BG887880
LOCUS       BG887880                 756 bp    mRNA    linear   EST 07-MAR-2003
DEFINITION  EST513731 cSTD Solanum tuberosum cDNA clone cSTD7B12 5' sequence,
            mRNA sequence.
ACCESSION   BG887880
VERSION     BG887880.1  GI:14264966
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 756)
  AUTHORS   van der Hoeven,R., Bezzerides,J., Ewing,E., Cho,J., Chiemingo,A.,
            Bougri,O., Buell,C.R., Ronning,C., Tanksley,S. and Baker,B.
  TITLE     Generations of ESTs from dormant potato tubers
  JOURNAL   Unpublished (2001)
COMMENT     Contact: Robin Buell
            The Institute for Genomic Research
            9712 Medical Center Dr, Rockville, MD 20850, USA
            Email: potato-array@tigr.org
            This clone can be obtained from the University of Arizona Genomics
            Institute. Orders can be made through URL:
            http://genome.arizona.edu/orders/
            Seq primer: M13F-R.
FEATURES             Location/Qualifiers
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                     /cultivar="Kennebec"
                     /db_xref="taxon:4113"
                     /clone="cSTD7B12"
                     /tissue_type="dormant tuber"
                     /dev_stage="one month post-harvest"
                     /lab_host="SOLR"
                     /clone_lib="cSTD"
                     /note="Vector: pBluescript SK(-); Site_1: EcoRI; Site_2:
                     XhoI; This library targets genes expressed in dormant
                     tubers. This library was made from sections of dormant
                     tuber, avoiding the buds and epidermis. Tubers were stored
                     for one month post-harvest at 4oC. The tuber was peeled,
                     well away from the surface. Then it was chopped into 1-2
                     mm cubes and immediately frozen in liquid nitrogen. This
                     library is noted as P4 in Tanksley lab notebooks."
ORIGIN

  Query Match             54.8%;  Score 618.2;  DB 4;  Length 756;
  Best Local Similarity   95.1%;  Pred. No. 3e-150;
  Matches  638;  Conservative    0;  Mismatches   33;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         74 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 133

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||||||||||||||||||||||||||||||||||||||||||| |||||||||||  ||||||
Db        134 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 193

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 253

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
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Db        254 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 313

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
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Db        314 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 373

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
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Db        374 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 433

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||
Db        434 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 493

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
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Db        494 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 553

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
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Db        554 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 613

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
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Db        614 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 673

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
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Db        674 CGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 733

Qy       1115 AATTAGGTAAT 1125
                ||||| || ||
Db        734 AATTAAGTCAT 744


RESULT 9
BG351001
LOCUS       BG351001                802 bp    mRNA    linear   EST 11-SEP-2002
DEFINITION  099E05 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA
            sequence.
ACCESSION   BG351001
VERSION     BG351001.1  GI:13179727
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 802)
  AUTHORS   Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
  TITLE     The potato tuber transcriptome: analysis of 6077 expressed sequence
            tags
  JOURNAL   FEBS Lett. 506 (2), 123-126 (2001)
  MEDLINE   21475600
   PUBMED   11591384
COMMENT     Contact: Karen G. Welinder
            Institut for bioteknologi
            Aalborg Universitet
            Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
            Tel: +45 96358467
            Fax: +45 98141808
            Email: kgw@bio.auc.dk
            Sequenced from the 5' end.
            High quality sequence stop: 802
            POLYA=No.
FEATURES             Location/Qualifiers
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                     /cultivar="Field grown Kuras"
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                     /note="Vector: Lambda ZAP"
ORIGIN

  Query Match             54.8%;  Score 618.2;  DB 4;  Length 802;
  Best Local Similarity   95.1%;  Pred. No. 3.1e-150;
  Matches  638;  Conservative    0;  Mismatches   33;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
                ||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         67 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 126

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
                |||||||||||||||||||||||||||||||||||||||| |||||||||||  ||||||
Db        127 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 186

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        187 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 246

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
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Db        247 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 306

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
                |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        307 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 366

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
                |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        367 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 426

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
                |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        427 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 486

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
                ||||||||||||||||||||||| |||||||||||||||||||||||||||||||| |
Db        487 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 546

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
                |||||||||||||||||||||||||||||||||||| |||||||||||||| |||||||
Db        547 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 606

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
                |||||||||| |||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db        607 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 666

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
                |||||||||||| |||||||||||||||| |||||||||| ||||||| ||| |||||
Db        667 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTGGCTTC 726

Qy       1115 AATTAGGTAAT 1125
                ||||| || ||
Db        727 AATTAAGTCAT 737


RESULT 10
BG351741
LOCUS       BG351741                828 bp    mRNA    linear   EST 11-SEP-2002
DEFINITION  131G03 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA
            sequence.
ACCESSION   BG351741
VERSION     BG351741.1  GI:13180483
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 828)
  AUTHORS   Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
  TITLE     The potato tuber transcriptome: analysis of 6077 expressed sequence
            tags
  JOURNAL   FEBS Lett. 506 (2), 123-126 (2001)
  MEDLINE   21475600
   PUBMED   11591384
COMMENT     Contact: Karen G. Welinder
            Institut for bioteknologi
            Aalborg Universitet
            Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
            Tel: +45 96358467
            Fax: +45 98141808
            Email: kgw@bio.auc.dk
            Sequenced from the 5' end.
            High quality sequence stop: 828
            POLYA=No.
FEATURES             Location/Qualifiers
     source          1. .828
                     /organism="Solanum tuberosum"
                     /mol_type="mRNA"
                     /cultivar="Field grown Kuras"
                     /db_xref="taxon:4113"
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                     /tissue_type="Tuber"
                     /clone_lib="Mature tuber lambda ZAP"
                     /note="Vector: Lambda ZAP"
ORIGIN

  Query Match             54.8%;  Score 618.2;  DB 4;  Length 828;
  Best Local Similarity   95.1%;  Pred. No. 3.1e-150;
  Matches  638;  Conservative    0;  Mismatches   33;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         90 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 149

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||| |||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        150 GGCGACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 209

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        210 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 269

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| ||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        270 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 329

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        330 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTACAATTTTTGGCCCAAT 389

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        390 GTATGATGGAAAATATCTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 449

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db        450 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 509

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              ||||||||||||||||||||||| ||||||||||||||||||||||||||||||||| |
Db        510 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 569

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||| ||||||||||||| |||||||||||||||| |||||||
Db        570 CTATTCCACAGCAGCAGCTCCAATATATTTTCCTCCACATTACTTTGTTACTCATACTAG 629

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              ||||||  |||  ||||||||||||||||||||||||||||||||||||||| ||||||
Db        630 TAATGGTGATAGATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 689

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| ||||||||||||||||||||||||| |||||||||||||| ||||
Db        690 GGCGTTATTATCCCTTAGCGTTGCAACGAGACTTGCACAAGAGGATCCAGCATTTTCTTC 749

Qy       1115 AATTAGGTAAT 1125
              ||||| || ||
Db        750 AATTAAGTCAT 760


RESULT 11
CV469997
LOCUS       CV469997                819 bp    mRNA    linear   EST 01-OCT-2004
DEFINITION  42774.1 Common Scab-Challenged Tubers Solanum tuberosum cDNA clone
            42774 5', mRNA sequence.
ACCESSION   CV469997
VERSION     CV469997.1  GI:53694773
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 819)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from common scab-challenged potato tubers
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
     source          1. .819
                     /organism="Solanum tuberosum"
                     /mol_type="mRNA"
                     /cultivar="Shepody"
                     /db_xref="taxon:4113"
                     /clone="42774"
                     /tissue_type="Tubers"
                     /lab_host="XL10-Gold"
                     /clone_lib="Common Scab-Challenged Tubers"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Pathogen-challenge series. Tubers
                     from pathogen-free Solanum tuberosum var. Shepody, clone
                     1756, were inoculated with Streptomyces scabei EF-35, by
                     applying 1 ml of a spore stock (OD650 = 0.7). Tubers were
                     placed in trays of sand and watered from the bottom for
                     the remainder of the experiment. Inoculated tubers were
                     sampled at 2 days, 1 week, 2 weeks and 4 weeks
                     post-infection. Harvested tubers were washed in distilled
                     water, blotted dry, cut into small pieces and frozen in
                     liquid nitrogen. RNA was isolated from each sample
                     collection, pooled and used for cDNA library
                     construction."
ORIGIN

  Query Match             54.7%;  Score 617.4;  DB 7;  Length 819;
  Best Local Similarity   95.4%;  Pred. No. 5e-150;
  Matches  636;  Conservative    0;  Mismatches   31;  Indels    0;  Gaps    0;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         88 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 147

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        148 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 207

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        208 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 267

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| ||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db        268 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 327

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        328 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 387

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||
Db        388 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 447

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db        448 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 507

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              ||||||||||||||||||||||| ||||||||||||||||||||||||||||||||| |
Db        508 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 567

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||| ||||||||||||| |||||||||||||||| |||||||
Db        568 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 627
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```
Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||||||| |||||||||||||||||||||||||||||||||||||||||||||||||
Db        628 TAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 687

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||||| |||||||||| ||||||| |||||||||
Db        688 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 747

Qy       1115 AATTAGG 1121
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Db        748 AATTAAG 754
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RESULT 12
BG351249
LOCUS BG351249 741 bp mRNA linear EST 11-SEP-2002
DEFINITION 088C08 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA sequence.
ACCESSION BG351249
VERSION BG351249.1 GI:13179991
KEYWORDS EST.
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1 (bases 1 to 741)
AUTHORS Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
TITLE The potato tuber transcriptome: analysis of 6077 expressed sequence tags
JOURNAL FEBS Lett. 506 (2), 123-126 (2001)
MEDLINE 21475600
PUBMED 11591384
COMMENT Contact: Karen G. Welinder
Institut for bioteknologi
Aalborg Universitet
Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
Tel: +45 96358467
Fax: +45 98141808
Email: kgw@bio.auc.dk
Sequenced from the 5' end.
High quality sequence stop: 741
POLYA=No.
FEATURES Location/Qualifiers
source 1. .741
/organism="Solanum tuberosum"
/mol_type="mRNA"
/cultivar="Field grown Kuras"
/db_xref="taxon:4113"
/tissue_type="Tuber"
/clone_lib="Mature tuber lambda ZAP"
/note="Vector: Lambda ZAP"
ORIGIN

Query Match 54.7%; Score 617.2; DB 4; Length 741;
Best Local Similarity 95.1%; Pred. No. 5.5e-150;
Matches 637; Conservative 0; Mismatches 33; Indels 0; Gaps 0;

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Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              |||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         72 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 131

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              ||| |||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db        132 GGCGACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 191

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        192 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 251

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| |||||||||||||||||||||||||||||||||||||||| ||||||||
Db        252 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 311

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| |||||||  |||||| |||||||
Db        312 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTACAATTTTTGGCCCAAT 371

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||
Db        372 GTATGATGGAAAATATCTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 431

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db        432 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 491

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||| |||||||||||||||||||||||||||||||||| |
Db        492 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 551

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||| |||||||||||| |||||||||||||| |||||||
Db        552 CTATTCCACAGCAGCAGCTCCAATATATTTTCCTCCACATTACTTTGTTACTCATACTAG 611

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||| ||| |||||||||||||||||||||||||||||||||||||||| ||||||
Db        612 TAATGGTGATAGATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGGTGATCC 671

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||||||||||||||||| |||||||||||||| ||||
Db        672 GGCGTTATTATCCCTTAGCGTTGCAACGAGACTTGCACAAGAGGATCCAGCATTTTCTTC 731

Qy       1115 AATTAGGTAA 1124
              ||||| || |
Db        732 AATTAAGTCA 741
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RESULT 13
BG351792
LOCUS BG351792 700 bp mRNA linear EST 11-SEP-2002
DEFINITION 132G04 Mature tuber lambda ZAP Solanum tuberosum cDNA, mRNA sequence.
ACCESSION BG351792
VERSION BG351792.1 GI:13180534
KEYWORDS EST.
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1 (bases 1 to 700)
AUTHORS Crookshanks,M., Emmersen,J., Welinder,K.G. and Nielsen,K.L.
TITLE The potato tuber transcriptome: analysis of 6077 expressed sequence tags
JOURNAL FEBS Lett. 506 (2), 123-126 (2001)
MEDLINE 21475600
PUBMED 11591384
COMMENT Contact: Karen G. Welinder
Institut for bioteknologi
Aalborg Universitet
Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
Tel: +45 96358467
Fax: +45 98141808
Email: kgw@bio.auc.dk
Sequenced from the 5' end.
High quality sequence stop: 700
POLYA=No.
FEATURES Location/Qualifiers
source 1. .700
/organism="Solanum tuberosum"
/mol_type="mRNA"
/cultivar="Field grown Kuras"
/db_xref="taxon:4113"
/tissue_type="Tuber"
/clone_lib="Mature tuber lambda ZAP"
/note="Vector: Lambda ZAP"

ORIGIN

Query Match 54.7%; Score 616.8; DB 4; Length 700;
Best Local Similarity 95.2%; Pred. No. 6.9e-150;
Matches 636; Conservative 0; Mismatches 32; Indels 0; Gaps 0;

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Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
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Db         33 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 92

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||| ||||||||||  ||||||
Db         93 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATAAAGATGC 152

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        153 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 212

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
              |||||||| |||||||||||||||||||||||||||||||||||||||| ||||||||
Db        213 TATGATAACTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGATATTGTACC 272

Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| ||||||||| ||||||||  |||||| |||||||
Db        273 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTGGTTCAATTTTTGGCCCAAT 332

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
              ||||||||||||||| || ||||||||||||||||||||||||||||||||||||||||||
Db        333 GTATGATGGAAAATATTTTCTGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 392

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
              |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db        393 TCAAGCTTTGACAGAAGTTGCCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 452

Qy        875 ATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATAAG 934
              |||||||||||||||||||||||| |||||||||||||||||||||||||||||||| |
Db        453 ATTCACTAAGTCAAATTTAGCAAAGTCTCCAGAATTGGATGCTAAGATGTATGACATATG 512

Qy        935 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACTAG 994
              |||||||||||||||||||||||||||||||||| |||||||||||||| |||||||
Db        513 TTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGTTACTCATACTAG 572

Qy        995 TAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCC 1054
              |||||||||| |||||||||||||||||| |||||||||||||||||||||||| ||||||
Db        573 TAATGGAGATAAATATGAGTTCAATCTTGTAGATGGTGCTGTTGCTACTGTTGGTGATCC 632

Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
              |||||||||||||| |||||||||||||||| |||||||||  |||||||  |||||||||
Db        633 GGCGTTATTATCCCTTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 692

Qy       1115 AATTAGGT 1122
              ||||| ||
Db        693 AATTAAGT 700
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RESULT 14
BG887154
LOCUS BG887154 781 bp mRNA linear EST 07-MAR-2003
DEFINITION EST513005 cSTD Solanum tuberosum cDNA clone cSTD3J21 5' sequence, mRNA sequence.
ACCESSION BG887154
VERSION BG887154.1 GI:14264240
KEYWORDS EST.
SOURCE Solanum tuberosum (potato)
ORGANISM Solanum tuberosum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE 1 (bases 1 to 781)
AUTHORS van der Hoeven,R., Bezzerides,J., Ewing,E., Cho,J., Chiemingo,A., Bougri,O., Buell,C.R., Ronning,C., Tanksley,S. and Baker,B.
TITLE Generations of ESTs from dormant potato tubers
JOURNAL Unpublished (2001)

COMMENT Contact: Robin Buell
The Institute for Genomic Research
9712 Medical Center Dr, Rockville, MD 20850, USA
Email: potato-array@tigr.org
This clone can be obtained from the University of Arizona Genomics Institute. Orders can be made through URL:
http://genome.arizona.edu/orders/
Seq primer: M13F-R.

FEATURES Location/Qualifiers
source 1. .781
/organism="Solanum tuberosum"
/mol_type="mRNA"
/cultivar="Kennebec"
/db_xref="taxon:4113"
/clone="cSTD3J21"
/tissue_type="dormant tuber"
/dev_stage="one month post-harvest"
/lab_host="SOLR"
/clone_lib="cSTD"
/note="Vector: pBluescript SK(-); Site_1: EcoRI; Site_2: XhoI; This library targets genes expressed in dormant tubers. This library was made from sections of dormant tuber, avoiding the buds and epidermis. Tubers were stored for one month post-harvest at 4oC. The tuber was peeled, well away from the surface. Then it was chopped into 1-2 mm cubes and immediately frozen in liquid nitrogen. This library is noted as P4 in Tanksley lab notebooks."

ORIGIN

Query Match 54.7%; Score 616.6; DB 4; Length 781;
Best Local Similarity 94.9%; Pred. No. 8e-150;
Matches 637; Conservative 0; Mismatches 34; Indels 0; Gaps 0;

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Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
              ||||||||||||||||||||||||||||||||||||||||||||||||||  || ||||||||
Db         95 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 154

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              |||||||||||||||||||||||||||||||||||||| |||||||||||  |||||||
Db        155 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAGTGGACAATAATACAGATGC 214

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
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Db        215 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 274

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
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Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAA 754
              |||||||||||||||||||||||| |||||||| |  ||||||||  |||||| ||||||||
Db        335 TTTTTACTTCGAACATGGCCCTAAGATTTTTCAATCTAGTGGTTCAATTTTTGGCCCAAA 394

Qy        755 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 814
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Db        395 ATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCA 454

Qy        815 TCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTAAT 874
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Qy       1055 GGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCTTC 1114
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Db        695 GGCATTATTATCCATTAGCGTTGCAACGAAACTTGCACAAGTGGATCCAAAATTTGCTTC 754

Qy       1115 AATTAGGTAAT 1125
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RESULT 15
CV286460
LOCUS       CV286460                795 bp    mRNA    linear   EST 23-SEP-2004
DEFINITION  66740.1 After-Cooking Darkening A Solanum tuberosum cDNA clone
            66740 5', mRNA sequence.
ACCESSION   CV286460
VERSION     CV286460.1  GI:52567707
KEYWORDS    EST.
SOURCE      Solanum tuberosum (potato)
  ORGANISM  Solanum tuberosum
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
            asterids; lamiids; Solanales; Solanaceae; Solanum.
REFERENCE   1  (bases 1 to 795)
  AUTHORS   Flinn,B., Rothwell,C., Sardana,R., Griffiths,R., Lague,M., De
            Koeyer,D., Audy,P., Goyer,C., Li,X.-Q., Wang-Pruski,G. and Regan,S.
  TITLE     Generation of ESTs from mature tubers following 1 month storage at
            9 degrees celsius, and 95% relative humidity
  JOURNAL   Unpublished (2004)
COMMENT     Contact: Barry Flinn
            The Canadian Potato Genome Project - BioAtlantech
            921 College Hill Rd, Fredericton, ON, E3B 6Z9, CANADA
            Email: bflinn@bioatlantech.nb.ca
            Seq primer: T3.
FEATURES             Location/Qualifiers
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                     /mol_type="mRNA"
                     /cultivar="Shepody"
                     /db_xref="taxon:4113"
                     /clone="66740"
                     /tissue_type="Tubers"
                     /lab_host="XL10-Gold"
                     /clone_lib="After-Cooking Darkening A"
                     /note="Vector: pBluescript II SK(+) XR; Site_1: EcoRI;
                     Site_2: XhoI; supplier: Developmental series. Plants from
                     pathogen-free Solanum tuberosum var. Shepody, clone 1756,
                     nuclear stock were grown in a screenhouse under natural
                     conditions. Mature, harvested tubers were stored in the
                     dark at 9C, 95% relative humidity for 1 month. The tuber
                     skin was then removed, and RNA was isolated from the
                     skinless tubers and used for library construction."
ORIGIN

  Query Match             54.6%;  Score 616.4;  DB 7;  Length 795;
  Best Local Similarity   95.7%;  Pred. No. 9e-150;
  Matches  645;  Conservative    0;  Mismatches   26;  Indels    3;  Gaps    1;

Qy        455 GTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATTCC 514
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Db         91 GTTGGAAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAAGGGAATCATTCC 150

Qy        515 GGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGATGC 574
              .|| ||||||||||||||||||||||||||||||| ||||||||||||||||||||||
Db        151 GGGTACCATTCTCGAATTTCTTGAAGGACAACTTCAGAAAATGGACAATAATGCAGATGC 210

Qy        575 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 634
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Db        211 AAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACTGC 270

Qy        635 TATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACC 694
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Qy        695 TTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAG---TGGTCAAATTTTAGGCCC 751
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Db        331 TTTTTACTTCGAACATGGCCCTCATATTTTTAATTCTAGTACTGGCCAATTTTTTGGCCC 390

Qy        752 AAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGT 811
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Qy        812 GCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGT 871
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Qy        872 AATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACAT 931
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Qy        932 AAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATAC 991
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Db        571 ATGTTATTCGACAGCAGCAGCTCCAACATATTTTCCTCCACATTACTTTGCTACTAATAC 630

Qy        992 TAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGA 1051
              || |||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db        631 TATTAATGGAGATAAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGA 690

Qy       1052 TCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGC 1111
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Qy       1112 TTCAATTAGGTAAT 1125
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Search completed: April  8, 2005, 16:10:22
Job time : 3615 secs
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GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: April 8, 2005, 13:22:21 ; Search time 234 Seconds
(without alignments)
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Title: US-10-658-180-246
Perfect score: 1128
Sequence: 1 tcgagaaaagagaggctgaa.....tgcttcaattaggtaatgag 1128

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1202784 seqs, 818138359 residues

Total number of hits satisfying chosen parameters: 2405568

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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1	1128	100.0	1128	4	US-09-755-630B-246	Sequence 246, App
2	1128	100.0	1128	4	US-09-755-274-20	Sequence 20, Appl
3	1036.2	91.9	1128	4	US-09-755-630B-258	Sequence 258, App
4	1036.2	91.9	1128	4	US-09-755-274-26	Sequence 26, Appl
5	963.4	85.4	1128	4	US-09-755-630B-250	Sequence 250, App
6	963.4	85.4	1128	4	US-09-755-274-22	Sequence 22, Appl
7	909	80.6	1128	4	US-09-755-630B-254	Sequence 254, App
8	909	80.6	1128	4	US-09-755-274-24	Sequence 24, Appl
9	879	77.9	1128	4	US-09-755-630B-262	Sequence 262, App
10	879	77.9	1128	4	US-09-755-274-28	Sequence 28, Appl
11	672.2	59.6	1138	4	US-09-755-630B-5	Sequence 5, Appli
12	671.4	59.5	1158	4	US-09-755-630B-1	Sequence 1, Appli
13	671.4	59.5	1158	4	US-09-755-274-38	Sequence 38, Appl
14	671.4	59.5	1161	4	US-09-755-630B-285	Sequence 285, App
15	671.4	59.5	1161	4	US-09-755-274-37	Sequence 37, Appl
16	652.4	57.8	1167	4	US-09-755-630B-270	Sequence 270, App
17	652.4	57.8	1167	4	US-09-755-274-32	Sequence 32, Appl
18	616	54.6	1167	4	US-09-755-630B-274	Sequence 274, App
19	616	54.6	1167	4	US-09-755-274-34	Sequence 34, Appl
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21	608	53.9	1380	1	US-07-936-163-1	Sequence 1, Appli
22	390.6	34.6	1158	4	US-09-755-630B-264	Sequence 264, App
23	390.6	34.6	1158	4	US-09-755-274-30	Sequence 30, Appl
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34	50	4.4	55	4	US-09-755-630B-242	Sequence 242, App
35	50	4.4	55	4	US-09-755-274-43	Sequence 43, Appl
36	49.4	4.4	606	4	US-09-248-796A-249	Sequence 249, App
c 37	47.8	4.2	51	4	US-09-755-630B-12	Sequence 12, Appl
c 38	47.8	4.2	7218	1	US-08-232-463-14	Sequence 14, Appl
39	47.6	4.2	308	4	US-09-313-294A-3820	Sequence 3820, Ap
c 40	44.6	4.0	1141	4	US-09-806-708B-22	Sequence 22, Appl
41	42.8	3.8	882	3	US-09-276-873-1	Sequence 1, Appli
c 42	42	3.7	42	4	US-09-755-630B-243	Sequence 243, App
c 43	42	3.7	42	4	US-09-755-274-44	Sequence 44, Appl
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45	41.2	3.7	861	4	US-09-925-637-63	Sequence 63, Appl

ALIGNMENTS

RESULT 1
US-09-755-630B-246
; Sequence 246, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 246
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic construct
US-09-755-630B-246

Query Match 100.0%; Score 1128; DB 4; Length 1128;
Best Local Similarity 100.0%; Pred. No. 1.9e-307;
Matches 1128; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 2
US-09-755-274-20
; Sequence 20, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 20
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1128)
;   OTHER INFORMATION: pMON37402 sequence encoding permutein protein
US-09-755-274-20

  Query Match           100.0%;  Score 1128;  DB 4;  Length 1128;
  Best Local Similarity  100.0%;  Pred. No. 1.9e-307;
  Matches 1128;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Qy         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120
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Qy        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180
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Db        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

Qy        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480

Qy        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540

Qy        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660

Qy        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
```

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Qy        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
              |||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
```

RESULT 3
US-09-755-630B-258
; Sequence 258, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 258
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic construct
US-09-755-630B-258

Query Match 91.9%; Score 1036.2; DB 4; Length 1128;
Best Local Similarity 99.2%; Pred. No. 1.4e-281;
Matches 1041; Conservative 0; Mismatches 8; Indels 0; Gaps 0;

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Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||    ||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059
```

RESULT 4
US-09-755-274-26
; Sequence 26, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
; APPLICANT: Alibhai, Murtaza
; APPLICANT: Rydel, Timothy
; TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
; FILE REFERENCE: 38-21 (51842)B
; CURRENT APPLICATION NUMBER: US/09/755,274
; CURRENT FILING DATE: 2001-01-05
; NUMBER OF SEQ ID NOS: 60
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 26
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: synthetic
; FEATURE:
; NAME/KEY: DNA
; LOCATION: (1)..(1128)
; OTHER INFORMATION: pMON37407 sequence encoding permutein protein
US-09-755-274-26

Query Match 91.9%; Score 1036.2; DB 4; Length 1128;
Best Local Similarity 99.2%; Pred. No. 1.4e-281;
Matches 1041; Conservative 0; Mismatches 8; Indels 0; Gaps 0;

```
Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||    ||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70
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Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059


RESULT 5
US-09-755-630B-250
; Sequence 250, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 250
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630B-250

  Query Match             85.4%;  Score 963.4;  DB 4;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 4.3e-261;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878
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Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123
```

RESULT 6
US-09-755-274-22
; Sequence 22, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
; APPLICANT: Alibhai, Murtaza
; APPLICANT: Rydel, Timothy
; TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
; FILE REFERENCE: 38-21 (51842)B
; CURRENT APPLICATION NUMBER: US/09/755,274
; CURRENT FILING DATE: 2001-01-05
; NUMBER OF SEQ ID NOS: 60
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 22
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: synthetic
; FEATURE:
; NAME/KEY: DNA
; LOCATION: (1)..(1128)
; OTHER INFORMATION: pMON37405 sequence encoding permutein protein
US-09-755-274-22

Query Match 85.4%; Score 963.4; DB 4; Length 1128;
Best Local Similarity 99.9%; Pred. No. 4.3e-261;
Matches 964; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```
Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123
```

RESULT 7
US-09-755-630B-254
; Sequence 254, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 254
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic construct
US-09-755-630B-254

Query Match 80.6%; Score 909; DB 4; Length 1128;
Best Local Similarity 100.0%; Pred. No. 9e-246;
Matches 909; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121
```

RESULT 8
US-09-755-274-24
; Sequence 24, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
; APPLICANT: Alibhai, Murtaza
; APPLICANT: Rydel, Timothy
; TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
; FILE REFERENCE: 38-21 (51842)B
; CURRENT APPLICATION NUMBER: US/09/755,274
; CURRENT FILING DATE: 2001-01-05
; NUMBER OF SEQ ID NOS: 60
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 24
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: synthetic
; FEATURE:
; NAME/KEY: DNA
; LOCATION: (1)..(1128)
; OTHER INFORMATION: pMON37406 sequence encoding permutein protein
US-09-755-274-24

Query Match 80.6%; Score 909; DB 4; Length 1128;
Best Local Similarity 100.0%; Pred. No. 9e-246;
Matches 909; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
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Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121


RESULT 9
US-09-755-630B-262
; Sequence 262, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 262
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630B-262

  Query Match             77.9%;  Score 879;  DB 4;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 2.5e-237;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900


RESULT 10
US-09-755-274-28
; Sequence 28, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 28
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1128)
;   OTHER INFORMATION: pMON37408 sequence encoding permutein protein
US-09-755-274-28

  Query Match             77.9%;  Score 879;  DB 4;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 2.5e-237;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
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Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900
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RESULT 11
US-09-755-630B-5
; Sequence 5, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 5
; LENGTH: 1138
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic construct
US-09-755-630B-5

Query Match 59.6%; Score 672.2; DB 4; Length 1138;
Best Local Similarity 99.6%; Pred. No. 4.3e-179;
Matches 674; Conservative 0; Mismatches 3; Indels 0; Gaps 0;

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Qy        449 AGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 508
              ||  ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         25 AGCTCAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGAT 84

Qy        509 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 568
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         85 CATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGC 144

Qy        569 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 628
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        145 AGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATT 204

Qy        629 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 688
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        205 GACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAAT 264

Qy        689 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 748
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        265 TGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGG 324

Qy        749 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 808
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        325 CCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCG 384

Qy        809 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 868
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        385 TGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCC 444

Qy        869 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 928
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        445 AGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGA 504

Qy        929 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 988
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        505 CATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAA 564

Qy        989 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 1048
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        565 TACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGC 624

Qy       1049 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 1108
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        625 TGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATT 684

Qy       1109 TGCTTCAATTAGGTAAT 1125
              ||||||||||||||| ||
Db        685 TGCTTCAATTAGGTCAT 701
```

RESULT 12
US-09-755-630B-1
; Sequence 1, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 1
; LENGTH: 1158
; TYPE: DNA
; ORGANISM: Solanum tuberosum
US-09-755-630B-1

Query Match 59.5%; Score 671.4; DB 4; Length 1158;

```
  Best Local Similarity   99.9%;  Pred. No. 7.4e-179;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742


RESULT 13
US-09-755-274-38
; Sequence 38, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 38
;   LENGTH: 1158
;   TYPE: DNA
;   ORGANISM: Solanum tuberosum
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1158)
;   OTHER INFORMATION: DNA sequence encoding a patatin (acyl lipid hydrolase) protein

US-09-755-274-38

  Query Match             59.5%;  Score 671.4;  DB 4;  Length 1158;
  Best Local Similarity   99.9%;  Pred. No. 7.4e-179;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742


RESULT 14
US-09-755-630B-285
; Sequence 285, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 285
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;   LENGTH: 1161
;   TYPE: DNA
;   ORGANISM: Solanum tuberosum
US-09-755-630B-285

  Query Match           59.5%;  Score 671.4;  DB 4;  Length 1161;
  Best Local Similarity   99.9%;  Pred. No. 7.4e-179;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
              |||||||||| ||
Db        730 TCAATTAGGTCAT 742


RESULT 15
US-09-755-274-37
; Sequence 37, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 37
;   LENGTH: 1161
;   TYPE: DNA
;   ORGANISM: Solanum cardiophyllum
;   FEATURE:
;   NAME/KEY: exon
;   LOCATION: (1)..(1161)
;   OTHER INFORMATION: patatin homolog Pat17 nucleic acid and amino acid translation
US-09-755-274-37

  Query Match           59.5%;  Score 671.4;  DB 4;  Length 1161;
  Best Local Similarity   99.9%;  Pred. No. 7.4e-179;
  Matches  672;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy        453 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 512
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         70 CAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGAGGGATCATT 129

Qy        513 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 572
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        130 CCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAATAATGCAGAT 189

Qy        573 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 632
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        190 GCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGTTTATTGACT 249

Qy        633 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 692
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        250 GCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAAGAAATTGTA 309

Qy        693 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 752
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        310 CCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATTTTAGGCCCA 369

Qy        753 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 812
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Db        370 AAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTG 429

Qy        813 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 872
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Db        430 CATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAATAAGCCAGTA 489

Qy        873 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 932
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Db        490 ATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATGTATGACATA 549

Qy        933 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 992
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Db        550 AGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTTACTAATACT 609

Qy        993 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 1052
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        610 AGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGTTGCTACTGTTGCTGAT 669

Qy       1053 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 1112
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        670 CCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAAGGATCCAGCATTTGCT 729

Qy       1113 TCAATTAGGTAAT 1125
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Db        730 TCAATTAGGTCAT 742


Search completed: April  8, 2005, 16:14:27
Job time : 237 secs
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GenCore version 5.1.6

OM nucleic - nucleic search, using sw model

Run on: April 8, 2005, 15:10:06 ; Search time 686 Seconds
(without alignments)
9964.554 Million cell updates/sec

Title: US-10-658-180-246
Perfect score: 1128
Sequence: 1 tcgagaaaagagaggctgaa.....tgcttcaattaggtaatgag 1128

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 5615251 seqs, 3030001701 residues

Total number of hits satisfying chosen parameters: 11230502

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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22: /cgn2_6/ptodata/1/pubpna/US60_PUBCOMB.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1128	100.0	1128	10	US-09-755-630A-246	Sequence 246, App
2	1128	100.0	1128	18	US-10-658-180-246	Sequence 246, App
3	1128	100.0	1128	18	US-10-682-011-20	Sequence 20, Appl
4	1036.2	91.9	1128	10	US-09-755-630A-258	Sequence 258, App
5	1036.2	91.9	1128	18	US-10-658-180-258	Sequence 258, App
6	1036.2	91.9	1128	18	US-10-682-011-26	Sequence 26, Appl
7	963.4	85.4	1128	10	US-09-755-630A-250	Sequence 250, App
8	963.4	85.4	1128	18	US-10-658-180-250	Sequence 250, App
9	963.4	85.4	1128	18	US-10-682-011-22	Sequence 22, Appl
10	909	80.6	1128	10	US-09-755-630A-254	Sequence 254, App
11	909	80.6	1128	18	US-10-658-180-254	Sequence 254, App
12	909	80.6	1128	18	US-10-682-011-24	Sequence 24, Appl
13	879	77.9	1128	10	US-09-755-630A-262	Sequence 262, App
14	879	77.9	1128	18	US-10-658-180-262	Sequence 262, App
15	879	77.9	1128	18	US-10-682-011-28	Sequence 28, Appl
16	672.2	59.6	1138	10	US-09-755-630A-5	Sequence 5, Appli
17	672.2	59.6	1138	18	US-10-658-180-5	Sequence 5, Appli
18	671.4	59.5	1158	10	US-09-755-630A-1	Sequence 1, Appli
19	671.4	59.5	1158	18	US-10-658-180-1	Sequence 1, Appli
20	671.4	59.5	1158	18	US-10-682-011-38	Sequence 38, Appl
21	671.4	59.5	1161	10	US-09-755-630A-285	Sequence 285, App
22	671.4	59.5	1161	18	US-10-658-180-285	Sequence 285, App
23	671.4	59.5	1161	18	US-10-682-011-37	Sequence 37, Appl
24	652.4	57.8	1167	10	US-09-755-630A-270	Sequence 270, App
25	652.4	57.8	1167	18	US-10-658-180-270	Sequence 270, App
26	652.4	57.8	1167	18	US-10-682-011-32	Sequence 32, Appl
27	616	54.6	1167	10	US-09-755-630A-274	Sequence 274, App
28	616	54.6	1167	18	US-10-658-180-274	Sequence 274, App
29	616	54.6	1167	18	US-10-682-011-34	Sequence 34, Appl
30	390.6	34.6	1158	10	US-09-755-630A-264	Sequence 264, App
31	390.6	34.6	1158	18	US-10-658-180-264	Sequence 264, App
32	390.6	34.6	1158	18	US-10-682-011-30	Sequence 30, Appl
33	194	17.2	1009	17	US-10-424-599-466	Sequence 466, App
34	185.2	16.4	276	17	US-10-417-280A-50	Sequence 50, Appl
35	149.2	13.2	1245	9	US-09-938-842A-2546	Sequence 2546, Ap
36	149.2	13.2	1245	11	US-09-938-842A-2546	Sequence 2546, Ap
37	143	12.7	1164	18	US-10-437-963-75340	Sequence 75340, A
38	140.8	12.5	1170	14	US-10-034-937-3	Sequence 3, Appli
39	140.8	12.5	1170	14	US-10-034-937-11	Sequence 11, Appl
40	139.6	12.4	1170	14	US-10-034-937-15	Sequence 15, Appl
41	139.6	12.4	1170	14	US-10-034-937-19	Sequence 19, Appl
42	139.2	12.3	1161	14	US-10-034-937-1	Sequence 1, Appli
43	139.2	12.3	1170	14	US-10-034-937-25	Sequence 25, Appl
44	139.2	12.3	1170	14	US-10-034-937-27	Sequence 27, Appl
45	139.2	12.3	1170	14	US-10-034-937-29	Sequence 29, Appl

ALIGNMENTS

RESULT 1
US-09-755-630A-246
; Sequence 246, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630A
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 293
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 246
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic construct
US-09-755-630A-246

Query Match 100.0%; Score 1128; DB 10; Length 1128;
Best Local Similarity 100.0%; Pred. No. 2.8e-276;
Matches 1128; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60

Qy         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120
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Db          61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

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Db         121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy         181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
                                                                                
Db         181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240

Qy         241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300
                                                                                
Db         241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300

Qy         301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360
                                                                                
Db         301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

Qy         361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420
                                                                                
Db         361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy         421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
                                                                                
Db         421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480

Qy         481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540
                                                                                
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Qy         541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
                                                                                
Db         541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy         601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
                                                                                
Db         601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660

Qy         661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
                                                                                
Db         661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy         721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
                                                                                
Db         721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy         781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
                                                                                
Db         781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy         841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
                                                                                
Db         841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy         901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
                                                                                
Db         901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960

Qy         961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
                                                                                
Db         961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy        1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
                                                                                
Db        1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy        1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
                                                                                
Db        1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
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RESULT 2

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US-10-658-180-246
; Sequence 246, Application US/10658180
; Publication No. US20040216187A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.DVUS02
;  CURRENT APPLICATION NUMBER: US/10/658,180
;  CURRENT FILING DATE:  2003-09-09
;  PRIOR APPLICATION NUMBER: US 09/755,630
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 246
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-10-658-180-246

  Query Match           100.0%;  Score 1128;  DB 18;  Length 1128;
  Best Local Similarity  100.0%;  Pred. No. 2.8e-276;
  Matches 1128;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db           1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60

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Db          61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

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Db         121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy         181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
                                                                                
Db         181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240

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Db         241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300

Qy         301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360
                                                                                
Db         301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

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Db         361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy         421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
                                                                                
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Qy         481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540
                                                                                
Db         481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540

Qy         541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
                                                                                
Db         541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy         601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
                                                                                
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Qy        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
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Db        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
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Db        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
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Db        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960

Qy        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
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Db       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
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RESULT 3
US-10-682-011-20
; Sequence 20, Application US/10682011
; Publication No. US20040253699A1
; GENERAL INFORMATION:
; APPLICANT: Alibhai, Murtaza
; APPLICANT: Rydel, Timothy
; TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
; FILE REFERENCE: 38-21 (51842)B
; CURRENT APPLICATION NUMBER: US/10/682,011
; CURRENT FILING DATE: 2003-10-09
; PRIOR APPLICATION NUMBER: US/09/755,274
; PRIOR FILING DATE: 2001-01-05
; NUMBER OF SEQ ID NOS: 60
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 20
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: synthetic
; FEATURE:
; NAME/KEY: DNA
; LOCATION: (1)..(1128)
; OTHER INFORMATION: pMON37402 sequence encoding permutein protein
US-10-682-011-20

Query Match 100.0%; Score 1128; DB 18; Length 1128;
Best Local Similarity 100.0%; Pred. No. 2.8e-276;
Matches 1128; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TCGAGAAAAGAGAGGCTGAAGCTTCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAG 60

Qy         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 GCACTGGCACTACTTCAGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGA 120

Qy        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180
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Db        121 CTGCTGTACATTGGATGTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGA 180

Qy        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 CTGATTATTACCTTTCTACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGG 240

Qy        241 TTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATA 300
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Qy        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 TGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATC 360

Qy        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAAC 420

Qy        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 TCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTA 480

Qy        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAG 540

Qy        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAA 600

Qy        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACA 660

Qy        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 ATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGA 720

Qy        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 TTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAG 780

Qy        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 TTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCT 840

Qy        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACT 900

Qy        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACAT 960

Qy        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATC 1020

Qy       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 TTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAA 1080

Qy       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
              |||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAATGAG 1128
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RESULT 4
US-09-755-630A-258
; Sequence 258, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.

```
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 258
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630A-258

  Query Match             91.9%;  Score 1036.2;  DB 10;  Length 1128;
  Best Local Similarity   99.2%;  Pred. No. 6.4e-253;
  Matches 1041;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||    ||||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059


RESULT 5
US-10-658-180-258
; Sequence 258, Application US/10658180
; Publication No. US20040216187A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.DVUS02
;  CURRENT APPLICATION NUMBER: US/10/658,180
;  CURRENT FILING DATE:  2003-09-09
;  PRIOR APPLICATION NUMBER: US 09/755,630
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 258
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-10-658-180-258

  Query Match             91.9%;  Score 1036.2;  DB 18;  Length 1128;
  Best Local Similarity   99.2%;  Pred. No. 6.4e-253;
  Matches 1041;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||    ||||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310
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Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970

Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059
```

```
RESULT 6
US-10-682-011-26
; Sequence 26, Application US/10682011
; Publication No. US20040253699A1
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/10/682,011
;  CURRENT FILING DATE:  2003-10-09
;  PRIOR APPLICATION NUMBER: US/09/755,274
;  PRIOR FILING DATE: 2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 26
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1128)
;   OTHER INFORMATION: pMON37407 sequence encoding permutein protein
US-10-682-011-26

  Query Match            91.9%;  Score 1036.2;  DB 18;  Length 1128;
  Best Local Similarity  99.2%;  Pred. No. 6.4e-253;
  Matches 1041;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;
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Qy         77 AGAGTTTGATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 136
              ||||  |||     ||||||||||||||||||||||||||||||||||||||||||||||
Db         11 AGAGGCTGAAGCTACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGAT 70

Qy        137 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 196
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         71 GTTAGTTATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTC 130

Qy        197 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 256
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        131 TACTGCTTTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATT 190

Qy        257 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 316
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        191 AACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACA 250

Qy        317 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 376
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        251 AGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGA 310

Qy        377 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGC 436
              ||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||
Db        311 AGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGATCAAACAAAGC 370

Qy        437 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 496
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        371 TTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGG 430

Qy        497 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 556
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        431 AATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAAT 490

Qy        557 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 616
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        491 GGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTAC 550

Qy        617 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 676
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        551 AGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGC 610

Qy        677 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 736
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        611 TGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGG 670

Qy        737 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 796
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        671 TCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACT 730

Qy        797 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 856
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        731 TGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAA 790

Qy        857 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 916
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        791 AACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGC 850

Qy        917 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 976
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        851 TAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTA 910

Qy        977 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 1036
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        911 CTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAATCTTGTTGATGGTGCTGT 970
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Qy       1037 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1096
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        971 TGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGCAACGAGACTTGCACAAAA 1030

Qy       1097 GGATCCAGCATTTGCTTCAATTAGGTAAT 1125
             |||||||||||||||||||||||||| ||
Db       1031 GGATCCAGCATTTGCTTCAATTAGGTCAT 1059


RESULT 7
US-09-755-630A-250
; Sequence 250, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 250
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630A-250

  Query Match             85.4%;  Score 963.4;  DB 10;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 2.1e-234;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123


RESULT 8
US-10-658-180-250
; Sequence 250, Application US/10658180
; Publication No. US20040216187A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.DVUS02
;  CURRENT APPLICATION NUMBER: US/10/658,180
;  CURRENT FILING DATE:  2003-09-09
;  PRIOR APPLICATION NUMBER: US 09/755,630
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 250
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-10-658-180-250

  Query Match             85.4%;  Score 963.4;  DB 18;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 2.1e-234;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278
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Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123
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RESULT 9
US-10-682-011-22
; Sequence 22, Application US/10682011
; Publication No. US20040253699A1
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/10/682,011
;  CURRENT FILING DATE:  2003-10-09
;  PRIOR APPLICATION NUMBER: US/09/755,274
;  PRIOR FILING DATE: 2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 22
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1128)
;   OTHER INFORMATION: pMON37405 sequence encoding permutein protein
US-10-682-011-22

  Query Match             85.4%;  Score 963.4;  DB 18;  Length 1128;
  Best Local Similarity   99.9%;  Pred. No. 2.1e-234;
  Matches  964;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        159 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 218

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        219 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 278

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        279 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 338

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        339 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 398

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        399 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 458

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        459 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 518

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        519 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 578

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        579 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 638

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        639 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 698

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        699 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 758

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        759 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 818

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        819 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 878

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        879 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 938

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        939 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 998
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Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        999 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1058

Qy        924 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 983
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1059 TATGACATAAGTTATTCCACAGCAGCAGCTCCAACATATTTTCCTCCGCATTACTTTGTT 1118

Qy        984 ACTAA 988
              ||| |
Db       1119 ACTTA 1123


RESULT 10
US-09-755-630A-254
; Sequence 254, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 254
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630A-254

  Query Match             80.6%;  Score 909;  DB 10;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-220;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121


RESULT 11
US-10-658-180-254
; Sequence 254, Application US/10658180
; Publication No. US20040216187A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.DVUS02
;  CURRENT APPLICATION NUMBER: US/10/658,180
;  CURRENT FILING DATE:  2003-09-09
;  PRIOR APPLICATION NUMBER: US 09/755,630
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 254
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-10-658-180-254

  Query Match             80.6%;  Score 909;  DB 18;  Length 1128;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-220;
  Matches  909;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332
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Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112

Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121
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RESULT 12
US-10-682-011-24
; Sequence 24, Application US/10682011
; Publication No. US20040253699A1
; GENERAL INFORMATION:
; APPLICANT: Alibhai, Murtaza
; APPLICANT: Rydel, Timothy
; TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
; FILE REFERENCE: 38-21 (51842)B
; CURRENT APPLICATION NUMBER: US/10/682,011
; CURRENT FILING DATE: 2003-10-09
; PRIOR APPLICATION NUMBER: US/09/755,274
; PRIOR FILING DATE: 2001-01-05
; NUMBER OF SEQ ID NOS: 60
; SOFTWARE: PatentIn version 3.0

; SEQ ID NO 24
; LENGTH: 1128
; TYPE: DNA
; ORGANISM: synthetic
; FEATURE:
; NAME/KEY: DNA
; LOCATION: (1)..(1128)
; OTHER INFORMATION: pMON37406 sequence encoding permutein protein
US-10-682-011-24

Query Match 80.6%; Score 909; DB 18; Length 1128;
Best Local Similarity 100.0%; Pred. No. 1.5e-220;
Matches 909; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         24 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        213 TCATTGAATTACAAAAAAATGCTGTTGCTCTCATTAGGCACTGGCACTACTTCAGAGTTT 272

Qy         84 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        273 GATAAAACATATACAGCAAAAGAGGCAGCTACCTGGACTGCTGTACATTGGATGTTAGTT 332

Qy        144 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        333 ATACAGAAAATGACTGATGCAGCAAGTTCTTACATGACTGATTATTACCTTTCTACTGCT 392

Qy        204 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        393 TTTCAAGCTCTTGATTCAAAAAACAATTACCTCAGGGTTCAAGAAAATGCATTAACAGGC 452

Qy        264 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        453 ACAACTACTGAAATGGATGATGCTTCTGAGGCTAATATGGAATTATTAGTACAAGTTGGT 512

Qy        324 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 383
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        513 GAAAACTTATTGAAGAAACCAGTTTCCGAAGACAATCCTGAAACCTATGAGGAAGCTCTA 572

Qy        384 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 443
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        573 AAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAAACTCCGAGCAAACAAAGCTTCTTAT 632

Qy        444 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 503
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        633 GGACCAGGACAGTTGGGAGAAATGGTGACTGTTCTTAGTATTGATGGAGGTGGAATTAGA 692

Qy        504 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 563
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        693 GGGATCATTCCGGCTACCATTCTCGAATTTCTTGAAGGACAACTTCAGGAAATGGACAAT 752

Qy        564 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 623
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        753 AATGCAGATGCAAGACTTGCAGATTACTTTGATGTAATTGGAGGAACAAGTACAGGAGGT 812

Qy        624 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 683
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        813 TTATTGACTGCTATGATAAGTACTCCAAATGAAAACAATCGACCCTTTGCTGCTGCCAAA 872

Qy        684 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 743
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        873 GAAATTGTACCTTTTTACTTCGAACATGGCCCTCAGATTTTTAATCCTAGTGGTCAAATT 932

Qy        744 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 803
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        933 TTAGGCCCAAAATATGATGGAAAATATCTTATGCAAGTTCTTCAAGAAAAACTTGGAGAA 992

Qy        804 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 863
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        993 ACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCATCTCAAGCTTTGACATCAAAACAAAT 1052

Qy        864 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 923
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1053 AAGCCAGTAATATTCACTAAGTCAAATTTAGCAAACTCTCCAGAATTGGATGCTAAGATG 1112
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Qy        924 TATGACATA 932
              |||||||||
Db       1113 TATGACATA 1121


RESULT 13
US-09-755-630A-262
; Sequence 262, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 262
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-09-755-630A-262

  Query Match             77.9%;  Score 879;  DB 10;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 6.3e-213;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              |||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900


RESULT 14
US-10-658-180-262
; Sequence 262, Application US/10658180
; Publication No. US20040216187A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.DVUS02
;  CURRENT APPLICATION NUMBER: US/10/658,180
;  CURRENT FILING DATE:  2003-09-09
;  PRIOR APPLICATION NUMBER: US 09/755,630
;  PRIOR FILING DATE: 2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 262
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct
US-10-658-180-262

  Query Match             77.9%;  Score 879;  DB 18;  Length 1128;
  Best Local Similarity   99.4%;  Pred. No. 6.3e-213;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||  ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313
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Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
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Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900
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RESULT 15
US-10-682-011-28
; Sequence 28, Application US/10682011
; Publication No. US20040253699A1
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/10/682,011
;  CURRENT FILING DATE:  2003-10-09
;  PRIOR APPLICATION NUMBER: US/09/755,274
;  PRIOR FILING DATE: 2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 28
;   LENGTH: 1128
;   TYPE: DNA
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: DNA
;   LOCATION: (1)..(1128)
;   OTHER INFORMATION: pMON37408 sequence encoding permutein protein
US-10-682-011-28

  Query Match            77.9%;  Score 879;  DB 18;  Length 1128;
  Best Local Similarity  99.4%;  Pred. No. 6.3e-213;
  Matches  882;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        239 GGTTCAAGAAAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 298
              || | |||. ||||||||||||||||||||||||||||||||||||||||||||||||||
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Db         14 GGCTGAAGCTAATGCATTAACAGGCACAACTACTGAAATGGATGATGCTTCTGAGGCTAA 73

Qy        299 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 358
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         74 TATGGAATTATTAGTACAAGTTGGTGAAAACTTATTGAAGAAACCAGTTTCCGAAGACAA 133

Qy        359 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 418
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        134 TCCTGAAACCTATGAGGAAGCTCTAAAGAGGTTTGCAAAATTGCTCTCTGATAGGAAGAA 193

Qy        419 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 478
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        194 ACTCCGAGCAAACAAAGCTTCTTATGGACCAGGACAGTTGGGAGAAATGGTGACTGTTCT 253

Qy        479 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 538
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        254 TAGTATTGATGGAGGTGGAATTAGAGGGATCATTCCGGCTACCATTCTCGAATTTCTTGA 313

Qy        539 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 598
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        314 AGGACAACTTCAGGAAATGGACAATAATGCAGATGCAAGACTTGCAGATTACTTTGATGT 373

Qy        599 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 658
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        374 AATTGGAGGAACAAGTACAGGAGGTTTATTGACTGCTATGATAAGTACTCCAAATGAAAA 433

Qy        659 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 718
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        434 CAATCGACCCTTTGCTGCTGCCAAAGAAATTGTACCTTTTTACTTCGAACATGGCCCTCA 493

Qy        719 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 778
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        494 GATTTTTAATCCTAGTGGTCAAATTTTAGGCCCAAAATATGATGGAAAATATCTTATGCA 553

Qy        779 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 838
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        554 AGTTCTTCAAGAAAAACTTGGAGAAACTCGTGTGCATCAAGCTTTGACAGAAGTTGTCAT 613

Qy        839 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 898
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        614 CTCAAGCTTTGACATCAAAACAAATAAGCCAGTAATATTCACTAAGTCAAATTTAGCAAA 673

Qy        899 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 958
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        674 CTCTCCAGAATTGGATGCTAAGATGTATGACATAAGTTATTCCACAGCAGCAGCTCCAAC 733

Qy        959 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 1018
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        734 ATATTTTCCTCCGCATTACTTTGTTACTAATACTAGTAATGGAGATGAATATGAGTTCAA 793

Qy       1019 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 1078
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        794 TCTTGTTGATGGTGCTGTTGCTACTGTTGCTGATCCGGCGTTATTATCCATTAGCGTTGC 853

Qy       1079 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTAAT 1125
              ||||||||||||||||||||||||||||||||||||||||||| ||
Db        854 AACGAGACTTGCACAAAAGGATCCAGCATTTGCTTCAATTAGGTCAT 900
```

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Search completed: April  8, 2005, 17:48:36
Job time : 690 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:18:52 ; Search time 175 Seconds
(without alignments)
808.882 Million cell updates/sec

Title: US-10-658-180-247
Perfect score: 1865
Sequence: 1 SLNYKKMLLLSLGTGTTSEF.....LSISVATRLAQKDPAFASIR 366

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_16Dec04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1865	100.0	366	4	AAG99308	Aag99308 Permutein
2	1865	100.0	366	8	ADM93060	Adm93060 Permutein
3	1865	100.0	389	4	AAG99314	Aag99314 Permutein
4	1865	100.0	389	8	ADM93072	Adm93072 Permutein
5	1769	94.9	389	4	AAG99315	Aag99315 Permutein
6	1769	94.9	389	8	ADM93074	Adm93074 Permutein
7	1753	94.0	366	4	AAG99311	Aag99311 Permutein
8	1753	94.0	366	8	ADM93066	Adm93066 Permutein
9	1645	88.2	366	4	AAG99309	Aag99309 Permutein
10	1645	88.2	366	8	ADM93062	Adm93062 Permutein
11	1544	82.8	366	4	AAG99310	Aag99310 Permutein
12	1544	82.8	366	8	ADM93064	Adm93064 Permutein
13	1480	79.4	366	4	AAG99312	Aag99312 Permutein
14	1480	79.4	366	8	ADM93068	Adm93068 Permutein
15	1139	61.1	367	4	AAG99081	Aag99081 Pre-cleav
16	1139	61.1	367	8	ADM93080	Adm93080 Post-clev
17	1139	61.1	386	4	AAG99325	Aag99325 Patatin h
18	1139	61.1	386	4	AAG99313	Aag99313 Permutein
19	1139	61.1	386	4	AAG99079	Aag99079 Potato pa
20	1139	61.1	386	8	ADM93070	Adm93070 Permutein
21	1139	61.1	386	8	ADM93040	Adm93040 Heartleaf
22	1139	61.1	386	8	ADM93078	Adm93078 Potato pa
23	1139	61.1	452	4	AAG99080	Aag99080 Pre-cleav
24	1139	61.1	452	8	ADM93079	Adm93079 Pre-cleva
25	1030.5	55.3	383	2	AAR72790	Aar72790 Patatin c
26	1030.5	55.3	383	2	AAW74512	Aaw74512 Amino aci
27	1019	54.6	386	4	AAG99319	Aag99319 Patatin i
28	1019	54.6	386	8	ADM93045	Adm93045 Patatin i
29	1017	54.5	386	4	AAG99318	Aag99318 Patatin i
30	1017	54.5	386	8	ADM93044	Adm93044 Patatin i
31	1014	54.4	380	2	AAR72789	Aar72789 Patatin c
32	1014	54.4	381	2	AAW74511	Aaw74511 Amino aci
33	1014	54.4	386	4	AAG99322	Aag99322 Patatin i
34	1014	54.4	386	8	ADM93043	Adm93043 Patatin i
35	1013	54.3	364	4	AAG99321	Aag99321 Patatin i
36	1013	54.3	364	8	ADM93042	Adm93042 Patatin i
37	1001.5	53.7	365	4	AAG99320	Aag99320 Patatin i
38	1001.5	53.7	365	8	ADM93041	Adm93041 Patatin i
39	618.5	33.2	400	3	AAG20550	Aag20550 Arabidops
40	618.5	33.2	400	3	AAG50025	Aag50025 Arabidops
41	614	32.9	383	3	AAG50026	Aag50026 Arabidops
42	614	32.9	383	3	AAG20551	Aag20551 Arabidops
43	614	32.9	414	3	AAG30649	Aag30649 Arabidops
44	613	32.9	420	5	AAM52549	Aam52549 Nicotiana
45	609.5	32.7	405	4	AAE02385	Aae02385 Rice lipi

ALIGNMENTS

RESULT 1
AAG99308
ID AAG99308 standard; protein; 366 AA.
XX
AC AAG99308;
XX
DT 28-SEP-2001 (first entry)
XX
DE Permutein protein #1.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Claim 26; Page 183-184; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 366 AA;

```
  Query Match           100.0%;  Score 1865;  DB 4;  Length 366;
  Best Local Similarity  100.0%;  Pred. No. 6.9e-163;
  Matches  366;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360

Qy        361 AFASIR 366
              ||||||
Db        361 AFASIR 366
```

```
RESULT 2
ADM93060
ID   ADM93060 standard; protein; 366 AA.
XX
AC   ADM93060;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein protein #1.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   N-PSDB; ADM93059.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 21; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the amino acid sequence of permutein.
XX
SQ   Sequence 366 AA;
```

```
  Query Match           100.0%;  Score 1865;  DB 8;  Length 366;
  Best Local Similarity  100.0%;  Pred. No. 6.9e-163;
  Matches  366;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360

Qy        361 AFASIR 366
              ||||||
Db        361 AFASIR 366
```

```
RESULT 3
AAG99314
ID   AAG99314 standard; protein; 389 AA.
XX
AC   AAG99314;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein #7.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Claim 60; Page 198-199; 223pp; English.
XX
```

CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 389 AA;

Query Match 100.0%; Score 1865; DB 4; Length 389;
Best Local Similarity 100.0%; Pred. No. 7.5e-163;
Matches 366; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 83

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 143

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 203

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        204 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 263

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        264 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 323

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        324 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 383

Qy        361 AFASIR 366
              ||||||
Db        384 AFASIR 389
```

RESULT 4
ADM93072
ID ADM93072 standard; protein; 389 AA.
XX
AC ADM93072;
XX
DT 03-JUN-2004 (first entry)
XX
DE Permutein protein #7.
XX
KW lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW insect control; nutritional supplement; ds; permutein.
XX
OS Synthetic.
XX
PN US6657046-B1.
XX
PD 02-DEC-2003.
XX
PF 05-JAN-2001; 2001US-00755274.
XX
PR 06-JAN-2000; 2000US-0174669P.
PR 21-JUL-2000; 2000US-0219912P.
XX
PA (MONS) MONSANTO TECHNOLOGY LLC.
XX
PI Alibhai MF, Rydel TJ;
XX
DR WPI; 2004-058368/06.
DR N-PSDB; ADM93071.
XX
PT New lipid acyl hydrolase proteins, useful for inhibiting insect
PT infestation of a plant or plant part, for controlling insects, as
PT nutritional supplements, or in immunotherapy protocols.
XX
PS Example 6; SEQ ID NO 33; 73pp; English.
XX
CC The invention relates to an isolated peptide exhibiting lipid acyl
CC hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC as nutritional supplements, and in immunotherapy protocols. The present
CC sequence represents the amino acid sequence of permutein.
XX
SQ Sequence 389 AA;

Query Match 100.0%; Score 1865; DB 8; Length 389;
Best Local Similarity 100.0%; Pred. No. 7.5e-163;
Matches 366; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 83

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 143

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 203

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        204 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 263

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        264 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 323

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        324 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 383

Qy        361 AFASIR 366
              ||||||
Db        384 AFASIR 389
```

RESULT 5
AAG99315
ID AAG99315 standard; protein; 389 AA.
XX
AC AAG99315;
XX
DT 28-SEP-2001 (first entry)
XX
DE Permutein protein #8.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.

```
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Claim 60; Page 201-202; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 389 AA;

  Query Match             94.9%;  Score 1769;  DB 4;  Length 389;
  Best Local Similarity   96.7%;  Pred. No. 5.3e-154;
  Matches  348;  Conservative    4;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          7 MLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 66
              ::|: :   |||   ||||||||||||||||||||||||||||||||||||||||||||
Db          8 LILIFMILATTSSTFATYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 67

Qy         67 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 126
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         68 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 127

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        128 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 187

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 247

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 306
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        248 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 307

Qy        307 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        308 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 367


RESULT 6
ADM93074
ID   ADM93074 standard; protein; 389 AA.
XX
AC   ADM93074;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein protein #8.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   N-PSDB; ADM93073.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 35; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the amino acid sequence of permutein.
XX
SQ   Sequence 389 AA;

  Query Match             94.9%;  Score 1769;  DB 8;  Length 389;
  Best Local Similarity   96.7%;  Pred. No. 5.3e-154;
  Matches  348;  Conservative    4;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          7 MLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 66
              ::|: :   |||   ||||||||||||||||||||||||||||||||||||||||||||
Db          8 LILIFMILATTSSTFATYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 67

Qy         67 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 126
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         68 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 127

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        128 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 187

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 247

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 306
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        248 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 307

Qy        307 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        308 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 367


RESULT 7
AAG99311
ID   AAG99311 standard; protein; 366 AA.
XX
AC   AAG99311;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein #4.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide.
XX
OS   Unidentified.
```

XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Claim 27; Page 190-192; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 366 AA;

Query Match 94.0%; Score 1753; DB 4; Length 366;
Best Local Similarity 99.7%; Pred. No. 1.4e-152;
Matches 343; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

```
Qy         23 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 82
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 60

Qy         83 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRANKASYGP 142
              ||||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||
Db         61 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRSNKASYGP 120

Qy        143 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 202
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 180

Qy        203 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 240

Qy        263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 300

Qy        323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 344
```

RESULT 8
ADM93066
ID ADM93066 standard; protein; 366 AA.
XX
AC ADM93066;
XX
DT 03-JUN-2004 (first entry)
XX
DE Permutein protein #4.
XX
KW lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW insect control; nutritional supplement; ds; permutein.
XX
OS Synthetic.
XX
PN US6657046-B1.
XX
PD 02-DEC-2003.
XX
PF 05-JAN-2001; 2001US-00755274.
XX
PR 06-JAN-2000; 2000US-0174669P.
PR 21-JUL-2000; 2000US-0219912P.
XX
PA (MONS) MONSANTO TECHNOLOGY LLC.
XX
PI Alibhai MF, Rydel TJ;
XX
DR WPI; 2004-058368/06.
DR N-PSDB; ADM93065.
XX
PT New lipid acyl hydrolase proteins, useful for inhibiting insect
PT infestation of a plant or plant part, for controlling insects, as
PT nutritional supplements, or in immunotherapy protocols.
XX
PS Example 6; SEQ ID NO 27; 73pp; English.
XX
CC The invention relates to an isolated peptide exhibiting lipid acyl
CC hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC as nutritional supplements, and in immunotherapy protocols. The present
CC sequence represents the amino acid sequence of permutein.
XX
SQ Sequence 366 AA;

Query Match 94.0%; Score 1753; DB 8; Length 366;
Best Local Similarity 99.7%; Pred. No. 1.4e-152;
Matches 343; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

```
Qy         23 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 82
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 60

Qy         83 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRANKASYGP 142
              ||||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||
Db         61 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRSNKASYGP 120

Qy        143 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 202
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 180

Qy        203 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 240

Qy        263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 300

Qy        323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 344
```

RESULT 9
AAG99309
ID AAG99309 standard; protein; 366 AA.
XX
AC AAG99309;
XX
DT 28-SEP-2001 (first entry)
XX

```
DE   Permutein protein #2.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Claim 60; Page 186-187; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 366 AA;

  Query Match             88.2%;  Score 1645;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-142;
  Matches  321;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         46 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 105

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        106 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 165

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        166 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 225

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        226 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 285

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 345

Qy        301 YDISYSTAAAPTYFPPHYFVT 321
              |||||||||||||||||||||
Db        346 YDISYSTAAAPTYFPPHYFVT 366


RESULT 10
ADM93062
ID   ADM93062 standard; protein; 366 AA.
XX
AC   ADM93062;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein protein #2.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   N-PSDB; ADM93061.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 23; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the amino acid sequence of permutein.
XX
SQ   Sequence 366 AA;

  Query Match             88.2%;  Score 1645;  DB 8;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-142;
  Matches  321;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         46 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 105

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        106 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 165

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        166 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 225

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        226 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 285

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 345

Qy        301 YDISYSTAAAPTYFPPHYFVT 321
              |||||||||||||||||||||
Db        346 YDISYSTAAAPTYFPPHYFVT 366


RESULT 11
AAG99310
```

```
ID   AAG99310 standard; protein; 366 AA.
XX
AC   AAG99310;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein #3.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Claim 60; Page 188-189; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 366 AA;

  Query Match             82.8%;  Score 1544;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 2.6e-133;
  Matches  303;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 123

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 183

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 243

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        244 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 303

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 363

Qy        301 YDI 303
              |||
Db        364 YDI 366
```

```
RESULT 12
ADM93064
ID   ADM93064 standard; protein; 366 AA.
XX
AC   ADM93064;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein protein #3.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   N-PSDB; ADM93063.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 25; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the amino acid sequence of permutein.
XX
SQ   Sequence 366 AA;

  Query Match             82.8%;  Score 1544;  DB 8;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 2.6e-133;
  Matches  303;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 123

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 183

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 243

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        244 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 303

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 363

Qy        301 YDI 303
```

```
                ||||
Db        364 YDI 366


RESULT 13
AAG99312
ID   AAG99312 standard; protein; 366 AA.
XX
AC   AAG99312;
XX
DT   28-SEP-2001  (first entry)
XX
DE   Permutein protein #5.
XX
KW   Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW   larva growth; lipid acyl hydrolase; insecticide.
XX
OS   Unidentified.
XX
PN   WO200149834-A2.
XX
PD   12-JUL-2001.
XX
PF   05-JAN-2001; 2001WO-US000342.
XX
PR   06-JAN-2000; 2000US-0174669P.
XX
PA   (MONS ) MONSANTO CO.
XX
PI   Alibhai MF,  Astwood JD,  Mcwherter CA,  Sampson HA;
XX
DR   WPI; 2001-441874/47.
XX
PT   Modified potato patatin proteins with reduced antigenicity, useful as
PT   insecticides for controlling e.g. round worm and root worm.
XX
PS   Claim 60; Page 193-194; 223pp; English.
XX
CC   The present invention relates to modified potato patatins that maintain
CC   enzymatic and insecticidal activity but which have reduced allergenicity.
CC   Groups (especially Tyr) which bind to anti-patatin antibodies were
CC   identified and glycosylation sites involved in antibody binding were
CC   removed via site directed mutagenesis. The patatins stunt the growth of
CC   larvae so that maturation is prevented or delayed. The patatins also have
CC   non-specific lipid acyl hydrolase activity. The modified patatins are
CC   also useful for inhibiting the activity of corn round worms.
CC   Deallergenised protein can be used as insecticides, as nutritional
CC   supplements and as immunising agents. The present sequence was used to
CC   illustrate the present invention
XX
SQ   Sequence 366 AA;

  Query Match             79.4%;  Score 1480;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-127;
  Matches  291;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         76 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 135
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 60

Qy        136 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 195
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 120

Qy        196 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 255
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 180

Qy        256 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 315
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 240

Qy        316 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 291


RESULT 14
ADM93068
ID   ADM93068 standard; protein; 366 AA.
XX
AC   ADM93068;
XX
DT   03-JUN-2004  (first entry)
XX
DE   Permutein protein #5.
XX
KW   lipid acyl hydrolase; corn rootworm; insect infestation; plant;
KW   insect control; nutritional supplement; ds; permutein.
XX
OS   Synthetic.
XX
PN   US6657046-B1.
XX
PD   02-DEC-2003.
XX
PF   05-JAN-2001; 2001US-00755274.
XX
PR   06-JAN-2000; 2000US-0174669P.
PR   21-JUL-2000; 2000US-0219912P.
XX
PA   (MONS ) MONSANTO TECHNOLOGY LLC.
XX
PI   Alibhai MF,  Rydel TJ;
XX
DR   WPI; 2004-058368/06.
DR   N-PSDB; ADM93067.
XX
PT   New lipid acyl hydrolase proteins, useful for inhibiting insect
PT   infestation of a plant or plant part, for controlling insects, as
PT   nutritional supplements, or in immunotherapy protocols.
XX
PS   Example 6; SEQ ID NO 29; 73pp; English.
XX
CC   The invention relates to an isolated peptide exhibiting lipid acyl
CC   hydrolase activity and corn rootworm insect inhibitory bioactivity. The
CC   lipid acyl hydrolase peptide is useful for inhibiting insect infestation
CC   of a plant or plant part, for controlling insects (e.g. corn rootworm),
CC   as nutritional supplements, and in immunotherapy protocols. The present
CC   sequence represents the amino acid sequence of permutein.
XX
SQ   Sequence 366 AA;

  Query Match             79.4%;  Score 1480;  DB 8;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-127;
  Matches  291;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         76 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 135
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 60

Qy        136 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 195
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 120

Qy        196 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 255
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 180

Qy        256 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 315
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 240

Qy        316 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 291
```

RESULT 15
AAG99081
ID AAG99081 standard; protein; 367 AA.
XX
AC AAG99081;
XX
DT 28-SEP-2001 (first entry)
XX
DE Pre-cleavage patatin protein #2.
XX
KW Insecticidal; immunosuppressive; potato; patatin; enzyme; allergenicity;
KW larva growth; lipid acyl hydrolase; insecticide.
XX
OS Unidentified.
XX
PN WO200149834-A2.
XX
PD 12-JUL-2001.
XX
PF 05-JAN-2001; 2001WO-US000342.
XX
PR 06-JAN-2000; 2000US-0174669P.
XX
PA (MONS) MONSANTO CO.
XX
PI Alibhai MF, Astwood JD, Mcwherter CA, Sampson HA;
XX
DR WPI; 2001-441874/47.
XX
PT Modified potato patatin proteins with reduced antigenicity, useful as
PT insecticides for controlling e.g. round worm and root worm.
XX
PS Claim 1; Page 138-139; 223pp; English.
XX
CC The present invention relates to modified potato patatins that maintain
CC enzymatic and insecticidal activity but which have reduced allergenicity.
CC Groups (especially Tyr) which bind to anti-patatin antibodies were
CC identified and glycosylation sites involved in antibody binding were
CC removed via site directed mutagenesis. The patatins stunt the growth of
CC larvae so that maturation is prevented or delayed. The patatins also have
CC non-specific lipid acyl hydrolase activity. The modified patatins are
CC also useful for inhibiting the activity of corn round worms.
CC Deallergenised protein can be used as insecticides, as nutritional
CC supplements and as immunising agents. The present sequence was used to
CC illustrate the present invention
XX
SQ Sequence 367 AA;

Query Match 61.1%; Score 1139; DB 4; Length 367;
Best Local Similarity 100.0%; Pred. No. 5.7e-96;
Matches 223; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          5 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 64

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         65 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 124

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        125 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 184

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        185 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 227
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Search completed: April 8, 2005, 07:38:50
Job time : 177 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:27:49 ; Search time 45 Seconds
(without alignments)
782.563 Million cell updates/sec

Title: US-10-658-180-247
Perfect score: 1865
Sequence: 1 SLNYKKMLLLSLGTGTTSEF.....LSISVATRLAQKDPAFASIR 366

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1033	55.4	386	2	A26017	patatin T5 precurs
2	1033	55.4	386	2	S51596	patatin precursor,
3	1017	54.5	386	2	A29810	patatin - potato
4	1014	54.4	386	2	S05592	patatin precursor
5	1014	54.4	386	2	B26017	patatin T58 precur
6	1011	54.2	384	2	A24142	patatin precursor
7	1004	53.8	386	2	T07592	class I patatin -
8	1002	53.7	377	2	S05593	patatin precursor
9	778.5	41.7	390	2	T03841	patatin homolog -
10	614	32.9	414	2	H85437	patatin-like prote
11	612	32.8	410	2	T52294	patatin-like prote
12	575	30.8	414	2	G85437	patatin-like prote
13	569.5	30.5	407	2	T00989	hypothetical prote
14	560	30.0	428	2	F85437	patatin-like prote
15	507.5	27.2	405	2	T10260	patatin-like prote
16	462.5	24.8	388	2	T10765	patatin-like latex
17	454.5	24.4	388	2	T10763	patatin-like latex
18	450.5	24.2	388	2	T10770	patatin-like latex
19	288.5	15.5	390	2	AG2093	patatin-like prote
20	284.5	15.3	499	2	T02580	hypothetical prote
21	275.5	14.8	488	2	T06725	hypothetical prote
22	257.5	13.8	526	2	T08541	hypothetical prote
23	243	13.0	382	2	T48109	hypothetical prote
24	212	11.4	355	2	E82354	patatin-related pr
25	198	10.6	490	2	B97815	patatin b1 precurs
26	189	10.1	1023	2	T26261	hypothetical prote
27	185.5	9.9	679	2	G71615	phospholipase A2-1
28	177	9.5	494	2	D71665	patatin b1 precurs
29	159	8.5	60	2	A23634	patatin precursor
30	148	7.9	56	2	S08631	patatin PGT3 - pot
31	146.5	7.9	468	2	T33857	hypothetical prote
32	143.5	7.7	456	2	T24442	hypothetical prote
33	135	7.2	1265	2	T02131	hypothetical prote
34	134	7.2	851	2	T12503	hypothetical prote
35	128	6.9	782	2	JC7284	phospholipase A2 (
36	125.5	6.7	1071	2	T22327	hypothetical prote
37	117.5	6.3	431	2	D87608	hypothetical prote
38	113.5	6.1	447	2	AD0168	probable ATPase pr
39	113.5	6.1	826	2	T06036	hypothetical prote
40	109.5	5.9	1237	2	D71850	probable outer mem
41	109	5.8	320	2	F70034	conserved hypothet
42	109	5.8	1048	2	A70592	hypothetical prote
43	108	5.8	845	1	GLVK	beta-glucosidase (
44	107.5	5.8	318	2	S24923	TEG protein - Baci
45	107.5	5.8	901	2	S50987	SOK1 protein - yea

ALIGNMENTS

RESULT 1
A26017
patatin T5 precursor - potato
C;Species: Solanum tuberosum (potato)
C;Date: 05-Oct-1988 #sequence_revision 05-Oct-1988 #text_change 09-Jul-2004
C;Accession: A26017
R;Rosahl, S.; Schmidt, R.; Schell, J.; Willmitzer, L.
Mol. Gen. Genet. 203, 214-220, 1986
A;Title: Isolation and characterization of a gene from Solanum tuberosum encoding patatir
A;Reference number: A26017
A;Accession: A26017
A;Molecule type: DNA
A;Residues: 1-386 <ROS>
A;Cross-references: UNIPROT:P15478
C;Superfamily: patatin

Query Match 55.4%; Score 1033; DB 2; Length 386;
Best Local Similarity 90.1%; Pred. No. 2.9e-67;
Matches 200; Conservative 9; Mismatches 13; Indels 0; Gaps 0;

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Qy       145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
            ||||||||||||||:||||||||||||||||:||| |||||||||||||||||||||
Db        25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNTDARLADYFDVIGGTSTGGLLTA 84

Qy       205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
            ||:|||| |||||||:|||||||||||:||  || | ||||||||||||||||||||||
Db        85 MITTPNETNRPFAAAKDIVPFYFEHGPKIFQSSGSIFGPKYDGKYLMQVLQEKLGETRVH 144

Qy       265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
            |||||| |||||||||||||||||| |||||||||| |||||||:|||||| ||||
Db       145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTFFPPHYFATNTS 204

Qy       325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
            |||:||||||||||||| ||||||||||:||| || ||||:
Db       205 NGDKYEFNLVDGAVATVDDPALLSISVATKLAQVDPKFASIK 246
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RESULT 2
S51596
patatin precursor, non-sucrose-inducible - Solanum brevidens
C;Species: Solanum brevidens
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
C;Accession: S51596
R;Banfalvi, Z.; Kostyal, Z.; Barta, E.
Mol. Gen. Genet. 245, 517-522, 1994
A;Title: Solanum brevidens possesses a non-sucrose-inducible patatin gene.
A;Reference number: S51596; MUID:95107249; PMID:7808402
A;Accession: S51596
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-386 <BAN>
A;Cross-references: UNIPROT:Q42502; EMBL:U09331; NID:g563124; PIDN:AAA66198.1; PID:g56312

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C;Superfamily: patatin
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-386/Product: patatin #status predicted <MAT>

  Query Match             55.4%;  Score 1033;  DB 2;  Length 386;
  Best Local Similarity   89.6%;  Pred. No. 2.9e-67;
  Matches  199;  Conservative   10;  Mismatches   13;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              |||||||||||||||:|||||||||||||||:||| ||||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||||:|||||||||| ||| || | || ||||| :||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNSSGSIFGPMYDGKYFLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||||| |||||||||| ||||||||||||||||||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTYFPPHYFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||:|||||||||||||| ||||||:|||:||| || ||||:
Db        205 NGDKYEFNLVDGAVATVGDPALLSLSVATKLAQVDPKFASIK 246


RESULT 3
A29810
patatin - potato
C;Species: Solanum tuberosum (potato)
C;Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 09-Jul-2004
C;Accession: A29810
R;Mignery, G.A.; Pikaard, C.S.; Park, W.D.
Gene 62, 27-44, 1988
A;Title: Molecular characterization of the patatin multigene family of potato.
A;Reference number: A29810; MUID:88226014; PMID:3371664
A;Accession: A29810
A;Molecule type: DNA
A;Residues: 1-386 <MIG>
A;Cross-references: UNIPROT:P11768; GB:M18880; NID:g169499; PIDN:AAA33819.1; PID:g169500
C;Genetics:
A;Introns: 56/3; 117/2; 169/3; 224/3; 320/3; 368/2
C;Superfamily: patatin

  Query Match             54.5%;  Score 1017;  DB 2;  Length 386;
  Best Local Similarity   87.9%;  Pred. No. 4.2e-66;
  Matches  196;  Conservative   13;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||||| ||| || |:|| ||||||:||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIIGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||||| |||||||||| ||||||| |||||||:|:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHYFITHT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||| |||||||| |||| ||||||:|||||||:||||:||:
Db        204 SNGDIYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 4
S05592
patatin precursor (clone pPATB2) - potato
C;Species: Solanum tuberosum (potato)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 09-Jul-2004
C;Accession: S05592
R;Stiekema, W.J.; Heidekamp, F.; Dirkse, W.G.; van Beckum, J.; de Haan, P.; ten Bosch, C
Plant Mol. Biol. 11, 255-269, 1988
A;Title: Molecular cloning and analysis of four potato tuber mRNAs.
A;Reference number: S05592
A;Accession: S05592
A;Molecule type: mRNA
A;Residues: 1-386 <STI>
A;Cross-references: UNIPROT:P15477; EMBL:X13178; NID:g21509; PIDN:CAA31575.1; PID:g21510
A;Note: the authors translated the codon CAG for residue 288 as Glu and CAA for residue 2
C;Superfamily: patatin
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-386/Product: patatin #status predicted <MAT>

  Query Match             54.4%;  Score 1014;  DB 2;  Length 386;
  Best Local Similarity   88.3%;  Pred. No. 7e-66;
  Matches  197;  Conservative   12;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||||| ||| || |||| ||||||:||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSILGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPIYFPPHHFVTHT 323
              |||||| |||||||||||||||||||| |||||||||| ||||||| |||||||:|:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHHFVTHT 203

Qy        324 SNGARYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIK 366
              ||| |||||||||||| ||||||:||||||||:||||:||:
Db        204 SNGARYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 5
B26017
patatin T58 precursor - potato
C;Species: Solanum tuberosum (potato)
C;Date: 03-Nov-1987 #sequence_revision 03-Nov-1987 #text_change 09-Jul-2004
C;Accession: B26017
R;Rosahl, S.; Schmidt, R.; Schell, J.; Willmitzer, L.
Mol. Gen. Genet. 203, 214-220, 1986
A;Title: Isolation and characterization of a gene from Solanum tuberosum encoding patatir
A;Reference number: A26017
A;Accession: B26017
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-386 <ROS>
A;Cross-references: UNIPROT:Q41467
C;Superfamily: patatin

  Query Match             54.4%;  Score 1014;  DB 2;  Length 386;
  Best Local Similarity   88.3%;  Pred. No. 7e-66;
  Matches  197;  Conservative   12;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||||| ||| || |||| ||||||:||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSILGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPIYFPPHHFVTNT 323
              |||||| |||||||||||||||||||| |||||||||| ||||||| |||||||:|:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHHFVTHT 203

Qy        324 SNGARYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIK 366
              ||| |||||||||||| ||||||:||||||||:||||:||:
Db        204 SNGARYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 6
A24142
patatin precursor - potato
C;Species: Solanum tuberosum (potato)
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C;Date: 29-Aug-1987 #sequence_revision 29-Aug-1987 #text_change 09-Jul-2004
C;Accession: A24142; S54829
R;Bevan, M.; Barker, R.; Goldsbrough, A.; Jarvis, M.; Kavanagh, T.; Iturriaga, G.
Nucleic Acids Res. 14, 4625-4638, 1986
A;Title: The structure and transcription start site of a major potato tuber protein gene
A;Reference number: A24142; MUID:86232596; PMID:3714488
A;Accession: A24142
A;Molecule type: DNA
A;Residues: 1-384 <BEV>
A;Cross-references: UNIPROT:Q9SAP2
R;Zhu, Y.; Dai, W.L.; Liu, J.; Zhao, S.Y.; Wang, X.M.
submitted to the EMBL Data Library, May 1995
A;Description: Isolation and sequence of class I patatin gene from a Chinese potato cult
A;Reference number: S54829
A;Accession: S54829
A;Molecule type: DNA
A;Residues: 1-56,'P' <ZHU>
A;Cross-references: EMBL:X87216; NID:g809604; PIDN:CAA60675.1; PID:g809605
A;Experimental source: clone 22-1; cultivar Dongnong 303
C;Genetics:
A;Introns: 56/3; 117/3; 169/3; 224/3; 320/3; 368/3
C;Superfamily: patatin
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-384/Product: patatin #status predicted <MAT>

  Query Match             54.2%;  Score 1011;  DB 2;  Length 384;
  Best Local Similarity   87.8%;  Pred. No. 1.1e-65;
  Matches  195;  Conservative   13;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              ||||||||||||||||:|||| ||||||||||:||| ||||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||:|||||||||| |||  | | ||:||||||:|||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNYRGSIFGPRYDGKYLLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||||.||:|||||||| ||||||| |||||:|||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAESPQLDAKMYDICYSTAAAPIYFPPHHFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||  |||||||||||||| ||||||:||||||||:||||:||:
Db        205 NGATYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 7
T07592
class I patatin - potato
C;Species: Solanum tuberosum (potato)
C;Date: 14-May-1999 #sequence_revision 14-May-1999 #text_change 09-Jul-2004
C;Accession: T07592
R;Yang, M.S.
submitted to the EMBL Data Library, November 1993
A;Reference number: Z16035
A;Accession: T07592
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-386 <YAN>
A;Cross-references: UNIPROT:Q41487; EMBL:Z27221; NID:g695755; PIDN:CAA81735.1; PID:g6957
A;Experimental source: cv. Sumi; mature plants
A;Note: cDNA, isolated from potato cultivated in Korea
C;Superfamily: patatin

  Query Match             53.8%;  Score 1004;  DB 2;  Length 386;
  Best Local Similarity   89.2%;  Pred. No. 3.7e-65;
  Matches  198;  Conservative    6;  Mismatches   18;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              | ||||||||||||:|||| ||||||||||:||||||||||||||||||||||||||
Db         25 LEEMVTVLSIDGGGIKGIIPGTILEFLEGQLQKMDNNADARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||:|||||||||| |||  | | ||:||||||:|||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNYRGSIFGPRYDGKYLLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||||.||:|||||||| ||||||| |||||:|||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAESPQLDAKMYDICYSTAAAPIYFPPHHFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||  |||||||||||||| ||||||:||||||||:||||:||:
Db        205 NGATYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 8
S05593
patatin precursor (clone pPATB1) - potato (fragment)
N;Contains: proteinase inhibitor II
C;Species: Solanum tuberosum (potato)
C;Date: 28-Feb-1990 #sequence_revision 28-Feb-1990 #text_change 09-Jul-2004
C;Accession: S05593
R;Stiekema, W.J.; Heidekamp, F.; Dirkse, W.G.; van Beckum, J.; de Haan, P.; ten Bosch, C.
Plant Mol. Biol. 11, 255-269, 1988
A;Title: Molecular cloning and analysis of four potato tuber mRNAs.
A;Reference number: S05592
A;Accession: S05593
A;Molecule type: mRNA
A;Residues: 1-377 <STI>
A;Cross-references: UNIPROT:P15476; EMBL:X13179; NID:g21507; PIDN:CAA31576.1; PID:g805067
A;Note: the authors translated the codon CAG for residue 288 as Glu and CAA for residue 2
C;Superfamily: patatin
F;1-14/Domain: signal sequence (fragment) #status predicted <SIG>
F;15-377/Product: patatin #status predicted <MAT>

  Query Match             53.7%;  Score 1002;  DB 2;  Length 377;
  Best Local Similarity   87.0%;  Pred. No. 5e-65;
  Matches  194;  Conservative   13;  Mismatches   16;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| ||||||||||||||:|||| ||||||||||:||| ||||||||||||||||||||
Db         15 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 74

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||||| ||| || | ||:||||||:||||||||||||
Db         75 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIFGPRYDGKYLLQVLQEKLGETRV 134

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              |||||| |||||||||||||||||||.||:|||||||| || |||| |||||:|||:|
Db        135 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSIAAAPIYFPPHHFVTHT 194

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||  |||||||| |||| ||||||:||||||||:||||:||:
Db        195 SNGATYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 237


RESULT 9
T03841
patatin homolog - common tobacco
C;Species: Nicotiana tabacum (common tobacco)
C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 09-Jul-2004
C;Accession: T03841
R;Drews, G.N.; Beals, T.P.; Bui, A.Q.; Goldberg, R.B.
Plant Cell 4, 1383-1404, 1992
A;Title: Regional and cell-specific gene expression patterns during petal development.
A;Reference number: Z15112; MUID:93120883; PMID:1477554
A;Accession: T03841
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-390 <DRE>
A;Cross-references: UNIPROT:O24152; EMBL:U68484; NID:g1546816; PIDN:AAB08428.1; PID:g1546
C;Superfamily: patatin

  Query Match             41.7%;  Score 778.5;  DB 2;  Length 390;
  Best Local Similarity   67.1%;  Pred. No. 8.1e-49;
  Matches  151;  Conservative   31;  Mismatches   36;  Indels    7;  Gaps    4;
```

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Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              :||: ||||||||||:||||||:| ||| ||||:||| |||||||||| ||||||:||
Db         25 VGEIATVLSIDGGGIKGIIPATVLSFLESQLQELDNNEDARLADYFDVIAGTSTGGILTT 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSG---QILGPKYDGKYLMQVLQEKLGET 261
              ||| ||| |||:|||:|| |||||||:|| | |    ||||||||||| :||::|||||
Db         85 MISAPNEKGRPFSAAKDIVSFYFEHGPKIF-PQGVWPPILGPKYDGKYLHKVLEDKLGET 143

Qy        262 RVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVT 321
              |:|| || ||| :||:|  :|:||||| :|||| ||||| || | ||||||||||:||
Db        144 RLHQTLTNVVIPTFDMKKFQPIIFTKSEIANSPHLDAKMSDICYGTAAAPTYFPPYYFEN 203

Qy        322 NTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              :   |:::|||||:|| |  | :|||:::|  |:    ||: |||:
Db        204 DDGKGNQHEFNLIDGGVVAV-NPALIAVSTVTK--SVDPSVASIK 245


RESULT 10
H85437
patatin-like protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: H85437
R;anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold Sprin
Nature 402, 769-777, 1999
A;Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana.
A;Reference number: A85001; MUID:20083488; PMID:10617198
A;Accession: H85437
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-414 <STO>
A;Cross-references: UNIPROT:O23179; GB:NC_001268; NID:g7270656; PIDN:CAB80373.1; GSPDB:G
C;Genetics:
A;Gene: AT4g37070
A;Map position: 4
C;Superfamily: patatin

  Query Match             32.9%;  Score 614;  DB 2;  Length 414;
  Best Local Similarity   50.0%;  Pred. No. 7.3e-37;
  Matches  126;  Conservative   42;  Mismatches   66;  Indels   18;  Gaps    6;

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              : ::   : ||    |   | :||:||:||||:||||   || ||| ||||:|   :|||
Db          1 MENKSPSKKNK----PPSCGSLVTILSLDGGGVRGIIAGVILAFLEKQLQELDGE-EARL 55

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIF-NPSGQIL---- 241
              ||||||| |||||||:|||:: |:|  ||  |||:||||| || |:||  |:| :
Db         56 ADYFDVIAGTSTGGLVTAMLTVPDETGRPHFAAKDIVPFYLEHCPKIFPQPTGVLALLPK 115

Qy        242 ------GPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPE 295
                   |||| ||||  :| : |||||:|| || :|| :|||  :| ||:   |   |
Db        116 LPKLLSGPKYSGKYLRNLLSKLLGETRLHQTLTNIVIPTFDIKKLQPTIFSSYQLLVDPS 175

Qy        296 LDAKMYDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSI-SVATR 354
              || |: ||   |:||||:||||||    | |:: ||||||||| |  :| |::: :|: :
Db        176 LDVKVSDICIGTSAAPTFFPPHYFSNEDSQGNKTEFNLVDGAV-TANNPTLVAMTAVSKQ 234

Qy        355 LAQKDPAFASIR 366
              : : :|    ::
Db        235 IVKNNPDMGKLK 246


RESULT 11
T52294
patatin-like protein [imported] - Arabidopsis thaliana (fragment)
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Oct-2000 #sequence_revision 20-Oct-2000 #text_change 09-Jul-2004
C;Accession: T52294
R;Terryn, N.; Heijnen, L.; De Keyser, A.; Van Asseldonck, M.; De Clercq, R.; Verbakel, H
ueller, C.; Mayer, K.; Dehais, P.; Rombauts, S.; Van Montagu, M.; Rouze, P.; Vos, P.
FEBS Lett. 445, 237-245, 1999
A;Title: Evidence for an ancient chromosomal duplication in Arabidopsis th aliana by seq
A;Reference number: Z26022; MUID:99192287; PMID:10094464
A;Accession: T52294
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-410 <TER>
A;Cross-references: UNIPROT:O23148; EMBL:AJ002596; PIDN:CAA05628.1
C;Genetics:
A;Map position: 4
C;Superfamily: patatin

  Query Match             32.8%;  Score 612;  DB 2;  Length 410;
  Best Local Similarity   52.3%;  Pred. No. 1e-36;
  Matches  124;  Conservative   38;  Mismatches   61;  Indels   14;  Gaps    5;

Qy        142 PGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGL 201
              |   | :||:||:||||:||||   || ||| ||||:|   :|||||||||| |||||||
Db          8 PPSCGSLVTILSLDGGGVRGIIAGVILAFLEKQLQELDGE-EARLADYFDVIAGTSTGGL 66

Qy        202 LTAMISTPNENNRPFAAAKEIVPFYFEHGPQIF-NPSGQIL----------GPKYDGKYL 250
              :|||:: |:|  ||  |||:||||| || |:||  |:| :           |||| ||||
Db         67 VTAMLTVPDETGRPHFAAKDIVPFYLEHCPKIFPQPTGVLALLPKLPKLLSGPKYSGKYL 126

Qy        251 MQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAA 310
                :| : |||||:|| || :|| :|||| :| ||:   |   | || |: ||   |:||
Db        127 RNLLSKLLGETRLHQTLTNIVIPTFDIKKLQPTIFSSYQLLVDPSLDVKVSDICIGTSAA 186

Qy        311 PTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSI-SVATRLAQKDPAFASIR 366
              ||:||||||     | |:: ||||||||| |  :| |::: :|: :: : :|    ::
Db        187 PTFFPPHYFSNEDSQGNKTEFNLVDGAV-TANNPTLVAMTAVSKQIVKNNPDMGKLK 242


RESULT 12
G85437
patatin-like protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: G85437
R;anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold Spring
Nature 402, 769-777, 1999
A;Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana.
A;Reference number: A85001; MUID:20083488; PMID:10617198
A;Accession: G85437
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-414 <STO>
A;Cross-references: UNIPROT:O23180; GB:NC_001268; NID:g7270655; PIDN:CAB80372.1; GSPDB:GN
C;Genetics:
A;Gene: AT4g37060
A;Map position: 4
C;Superfamily: patatin

  Query Match             30.8%;  Score 575;  DB 2;  Length 414;
  Best Local Similarity   50.4%;  Pred. No. 4.9e-34;
  Matches  119;  Conservative   33;  Mismatches   70;  Indels   14;  Gaps    5;

Qy        142 PGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGL 201
              |   | :||:||:||||:||||   || :|| ||||:|     |:|||||| |||||||
Db         12 PPSCGTLVTILSLDGGGVRGIIAGVILAYLEKQLQELDGE-HVRVADYFDVIAGTSTGGL 70

Qy        202 LTAMISTPNENNRPFAAAKEIVPFYFEHGPQIF-NPSGQIL----------GPKYDGKYL 250
              :|||:: |:|| ||  |||||||| || |:||  |:| :           |||| | ||
Db         71 VTAMLTAPDENGRPRFAAKEIVPFYLEHCPKIFPQPTGVLALLPKLPKLLSGPKYSGNYL 130

Qy        251 MQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAA 310
                | : ||||:: | || ||| :||||| :| ||:       | || |: ||   |:||
Db        131 RTTLGKLLGETKLRQTLTNVVIPTFDIKTLQPTIFSSYQALTDPSLDVKVSDICIGTSAA 190

Qy        311 PTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATR-LAQKDPAFASI 365
              ||||||:||    | |    |||||| | |  :| |::::  |: :   :|   ::
Db        191 PTYFPPYYFSNEDSQGKTRHFNLVDGGV-TANNPTLVAMTAVTKQIVNNNPDMGTL 245


RESULT 13
```

```
T00989
hypothetical protein At2g26560 [imported] - Arabidopsis thaliana
N;Alternate names: patatin homolog T9J22.23
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession: T00989; A84662
R;Rounsley, S.D.; Lin, X.; Ketchum, K.A.; Crosby, M.L.; Brandon, R.C.; Sykes, S.M.; Kaul
submitted to the EMBL Data Library, April 1998
A;Description: Arabidopsis thaliana chromosome II BAC T9J22 genomic sequence.
A;Reference number: Z14161
A;Accession: T00989
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-407 <ROU>
A;Cross-references: UNIPROT:O48723; EMBL:AC002505; NID:g2739359; PIDN:AAC14504.1; PID:g2
A;Experimental source: cultivar Columbia
R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J
Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487; PMID:10617197
A;Accession: A84662
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-407 <STO>
A;Cross-references: GB:AE002093; NID:g2739381; PIDN:AAC14504.1; GSPDB:GN00139
C;Genetics:
A;Gene: At2g26560; T9J22.23
A;Map position: 2
A;Introns: 46/3; 169/3; 223/3; 324/3; 382/2
C;Superfamily: patatin

  Query Match             30.5%;  Score 569.5;  DB 2;  Length 407;
  Best Local Similarity   51.8%;  Pred. No. 1.2e-33;
  Matches  118;  Conservative   32;  Mismatches   65;  Indels   13;  Gaps    3;

Qy        137 KASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGT 196
              |:   |   | :||:||||||||||:||| || ||| :||::|   :|||||||||| ||
Db          7 KSPLQPPTYGNLVTILSIDGGGIRGLIPAVILGFLESELQKLDGE-EARLADYFDVIAGT 65

Qy        197 STGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPS----------GQILGPKY 245
              |||||:|||:: ||:  ||  || ||  || |  |:||                : ||||
Db         66 STGGLVTAMLTAPNKEGRPLFAASEIKDFYLEQCPKIFPQDHFPPSAAKKLVKSLTGPKY 125

Qy        246 DGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISY 305
              ||||| |::  |||:|:: | || ||| :||||  :| ||:   : | |  || : ||:
Db        126 DGKYLHQLIHAKLGDTKLSQTLTNVVIPTFDIKHLQPTIFSSYEVKNHPLKDATLADIAI 185

Qy        306 STAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVAT 353
              ||:||||| | |:|     ||:  |:||:|| ||   :||||:|   |
Db        186 STSAAPTYLPAHFFKVEDLNGNAKEYNLIDGGVA-ANNPALLAIGEVT 232


RESULT 14
F85437
patatin-like protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: F85437
R;anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold Sprin
Nature 402, 769-777, 1999
A;Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana.
A;Reference number: A85001; MUID:20083488; PMID:10617198
A;Accession: F85437
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-428 <STO>
A;Cross-references: UNIPROT:O23181; GB:NC_001268; NID:g7270654; PIDN:CAB80371.1; GSPDB:G
C;Genetics:
A;Gene: AT4g37050
A;Map position: 4
C;Superfamily: patatin

  Query Match             30.0%;  Score 560;  DB 2;  Length 428;
  Best Local Similarity   48.0%;  Pred. No. 6.3e-33;
  Matches  117;  Conservative   43;  Mismatches   62;  Indels   22;  Gaps    6;

Qy        142 PGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGL 201
              |   |::||:|||||||||||||| ||| :|| ||||:|   :||| ||||||  |||||||
Db         28 PPSYGQLVTILSIDGGGIRGIIPGTILAYLESQLQELDGE-EARLVDYFDVISGTSTGGL 86

Qy        202 LTAMISTPNE-------NNRPFAAAKEIVPFYFEHGPQIF-NPSG----------QILG 242
              : ||::  ::        :|||   |||||||| :| |:||  | |            : |
Db         87 IVAMLTAQDQSGGHSRNSNRPLFEAKEIVPFYLKHSPKIFPQPRGIFCGWGETIVRLVGG 146

Qy        243 PKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYD 302
              ||::||||  :::  ||:|:: |:|| |||  ||||  :||||:     |:  ::||: |
Db        147 PKFNGKYLHDLVEGFLGDTKLTQSLTNVVIPCFDIKKLQPVIFSSYQAVNNQAMNAKLSD 206

Qy        303 ISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATR-LAQKDPA 361
              |  ||:||||:|| | |    | | ::||||:|| :|   :| | :|:  |: : :|:|
Db        207 ICISTSAAPTFFPAHRFTNEDSEGIKHEFNLIDGGIA-ANNPTLCAIAEVTKQIIKKNPV 265

Qy        362 FASI 365
              |
Db        266 MGDI 269


RESULT 15
T10260
patatin-like protein - cucumber (fragment)
C;Species: Cucumis sativus (cucumber)
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
C;Accession: T10260
R;Preisig-Mueller, R.; May, C.; Hoehne, M.; Gnau, P.; Kindl, H.
submitted to the EMBL Data Library, April 1997
A;Description: Is the patatin-like protein localized to lipid bodies involved in the mobi
A;Reference number: Z17002
A;Accession: T10260
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-405 <PRE>
A;Cross-references: UNIPROT:O23784; EMBL:Y12793
A;Experimental source: cotyledon
C;Function:
A;Description: mobilization of fat during seed germination
C;Superfamily: patatin

  Query Match             27.2%;  Score 507.5;  DB 2;  Length 405;
  Best Local Similarity   46.8%;  Pred. No. 3.7e-29;
  Matches  103;  Conservative   44;  Mismatches   60;  Indels   13;  Gaps    3;

Qy        146 GEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAM 205
              |:|:|:|||||||||||||: || ||| :|||:|   | |:|||||||  |||||||:|:|
Db         21 GKMITILSIDGGGIRGIIPSIILAFLESKLQELD-GPDVRIADYFDVIAGTSTGGLVTSM 79

Qy        206 ISTPNENNRPFAAAKEIVPFYFEHGPQIF----------NPSGQILGPKYDGKYLMQVL 254
              :: |::||||  :| ::  || || |:||           |  |:::||||:| ||  ::
Db         80 LTAPDKNNRPLYSASDLALFYIEHAPKIFPQRNYFLCSLVNFFGKVMGPKYNGLYLRSLI 139

Qy        255 QEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYF 314
              :  ||:  : | |::||| :||||  :|||||     |   : |: |:  ||:||||:
Db        140 KGLLGDITLKQTLSQVVIPAFDIKLLQPVIFTTIEAKCSELKNPKLADVCISTSAAPTFL 199

Qy        315 PPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATR 354
              | : | |  | |:   : :||| ||   :| | :::  |:
Db        200 PGYEFQTKDSKGNIRNYEMVDGGVA-ANNPTLAAMTHVTK 238


Search completed: April  8, 2005, 07:57:03
Job time : 46 secs
```

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:26:08 ; Search time 182 Seconds
(without alignments)
1029.786 Million cell updates/sec

Title: US-10-658-180-247
Perfect score: 1865
Sequence: 1 SLNYKKMLLLSLGTGTTSEF.....LSISVATRLAQKDPAFASIR 366

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_03:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1139	61.1	386	2	Q8LPW4	Q8lpw4 solanum car
2	1033	55.4	386	1	PAT5_SOLTU	P15478 solanum tub
3	1033	55.4	386	2	Q42502	Q42502 solanum tub
4	1033	55.4	386	2	Q7DMP8	Q7dmp8 solanum bre
5	1017	54.5	386	1	PAT3_SOLTU	P11768 solanum tub
6	1014	54.4	386	1	PAT0_SOLTU	P07745 solanum tub
7	1014	54.4	386	1	PAT2_SOLTU	P15477 solanum tub
8	1004	53.8	386	2	Q41487	Q41487 solanum tub
9	1002	53.7	377	1	PAT1_SOLTU	P15476 solanum tub
10	1002	53.7	386	2	Q41467	Q41467 solanum tub
11	996.5	53.4	387	2	Q8LSC1	Q8lsc1 solanum cha
12	778.5	41.7	263	2	Q7DMC7	Q7dmc7 nicotiana t
13	778.5	41.7	390	2	O24152	O24152 nicotiana t
14	614	32.9	383	2	Q8LBT5	Q8lbt5 arabidopsis
15	614	32.9	414	2	O23179	O23179 arabidopsis
16	613	32.9	420	2	Q9FZ09	Q9fz09 nicotiana t
17	612	32.8	410	2	O23148	O23148 arabidopsis
18	609.5	32.7	405	2	Q6ZJD3	Q6zjd3 oryza sativ
19	585	31.4	387	2	Q67IZ1	Q67iz1 oryza sativ
20	579	31.0	400	2	Q9AQT8	Q9aqt8 vigna ungui
21	575	30.8	414	2	O23180	O23180 arabidopsis
22	569.5	30.5	405	2	Q8LDK8	Q8ldk8 arabidopsis
23	569.5	30.5	407	2	O48723	O48723 arabidopsis
24	560	30.0	428	2	O23181	O23181 arabidopsis
25	545	29.2	442	2	Q8GVV8	Q8gvv8 oryza sativ
26	544.5	29.2	431	2	Q6ZG42	Q6zg42 oryza sativ
27	543	29.1	411	2	Q9FZ08	Q9fz08 nicotiana t
28	537.5	28.8	430	2	Q6ZG46	Q6zg46 oryza sativ
29	529.5	28.4	207	2	Q9FZ07	Q9fz07 nicotiana t
30	527	28.3	401	2	Q9FIY1	Q9fiy1 arabidopsis
31	525.5	28.2	410	2	Q9XE75	Q9xe75 sorghum bic
32	515	27.6	422	2	Q9XE77	Q9xe77 sorghum bic
33	511	27.4	411	2	Q8S0E1	Q8s0e1 oryza sativ
34	507.5	27.2	405	2	O23784	O23784 cucumis sat
35	494.5	26.5	432	2	Q84QY3	Q84qy3 oryza sativ
36	491.5	26.4	438	2	Q9XE79	Q9xe79 sorghum bic
37	462.5	24.8	388	2	O81984	O81984 hevea brasi
38	458.5	24.6	387	2	Q706V4	Q706v4 hevea brasi
39	458.5	24.6	388	2	Q9SEM0	Q9sem0 hevea brasi
40	454.5	24.4	388	2	O65811	O65811 hevea brasi
41	450.5	24.2	388	2	O04008	O04008 hevea brasi
42	341.5	18.3	339	2	Q8L3P2	Q8l3p2 arabidopsis
43	288.5	15.5	390	2	Q8YUN7	Q8yun7 anabaena sp
44	287	15.4	302	2	Q73HJ4	Q73hj4 wolbachia p
45	284.5	15.3	499	2	O80959	O80959 arabidopsis

ALIGNMENTS

RESULT 1
Q8LPW4
ID Q8LPW4 PRELIMINARY; PRT; 386 AA.
AC Q8LPW4;
DT 01-OCT-2002 (TrEMBLrel. 22, Created)
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Patatin.
OS Solanum cardiophyllum.
OC Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC lamiids; Solanales; Solanaceae; Solanum.
OX NCBI_TaxID=160510;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=22664533; PubMed=12779324; DOI=10.1021/bi027156r;
RA Rydel T.J., Williams J.M., Krieger E., Moshiri F., Stallings W.C.,
RA Brown S.M., Pershing J.C., Purcell J.P., Alibhai M.F.;
RT "The crystal structure, mutagenesis, and activity studies reveal that
RT patatin is a lipid acyl hydrolase with a Ser-Asp catalytic dyad.";
RL Biochemistry 42:6696-6708(2003).
RN [2]
RP SEQUENCE FROM N.A.
RA Joyce E.K., Levine E., Isaac B., Brown S.M., Pershing J.C.,
RA Purcell J.P., Alibhai M.F.;
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AY033231; AAK56395.1; -.
DR PDB; 1OXW; X-ray; A/B/C=14-386.
DR GO; GO:0003824; F:catalytic activity; IEA.
DR GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR InterPro; IPR002641; Patatin.
DR Pfam; PF01734; Patatin; 1.
SQ SEQUENCE 386 AA; 42486 MW; 30C56BA86A0242E2 CRC64;

Query Match 61.1%; Score 1139; DB 2; Length 386;
Best Local Similarity 100.0%; Pred. No. 4.9e-69;
Matches 223; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy      144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       24 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 83

Qy      204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       84 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 143

Qy      264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      144 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 203

Qy      324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
            |||||||||||||||||||||||||||||||||||||||||||
Db      204 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 246
```

```
RESULT 2
PAT5_SOLTU
ID   PAT5_SOLTU     STANDARD;      PRT;   386 AA.
AC   P15478;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
DE   Patatin T5 precursor (Potato tuber protein).
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Rosahl S., Schmidt R., Schell J., Willmitzer L.;
RT   "Isolation and characterization of a gene from Solanum tuberosum
RT   encoding patatin, the major storage protein of potato tubers.";
RL   Mol. Gen. Genet. 203:214-220(1986).
CC   -!- FUNCTION: Patatin may have a dual role as a somatic storage
CC       protein and as an enzyme involved in host resistance. This tuber
CC       protein represents approximately 40% of the total protein in
CC       mature tubers.
CC   -!- MISCELLANEOUS: There is strong evidence that patatin is a
CC       lipolytic acyl hydrolase (LAH), an activity which is thought to be
CC       involved in the response of tubers to pathogens.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X03932; CAA27571.1; -.
DR   PIR; A26017; A26017.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Glycoprotein; Hydrolase; Multigene family; Signal; Storage protein.
FT   SIGNAL        1     23
FT   CHAIN        24    386       Patatin T5.
FT   CARBOHYD     60     60       N-linked (GlcNAc. . .) (Potential).
FT   CARBOHYD     90     90       N-linked (GlcNAc. . .) (Potential).
FT   CARBOHYD    202    202       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   386 AA;  42338 MW;  E7F7FAD1A04A1000 CRC64;

  Query Match             55.4%;  Score 1033;  DB 1;  Length 386;
  Best Local Similarity   90.1%;  Pred. No. 7.5e-62;
  Matches  200;  Conservative    9;  Mismatches   13;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              ||||||||||||||||:||||||||||||||||||:||| ||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNTDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||| ||||||||:||||||||||:||   || | ||||||||||||||||||||||
Db         85 MITTPNETNRPFAAAKDIVPFYFEHGPKIFQSSGSIFGPKYDGKYLMQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||| |||||||||| ||||||||:|||||| ||||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTFFPPHYFATNTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||:|||||||||||| ||||||||||:||| || ||||:
Db        205 NGDKYEFNLVDGAVATVDDPALLSISVATKLAQVDPKFASIK 246


RESULT 3
Q42502
ID   Q42502      PRELIMINARY;      PRT;   386 AA.
AC   Q42502;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Patatin precursor.
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=85062793; PubMed=6150463;
RA   Mignery G.A., Pikaard C.S., Hannapel D.J., Park W.D.;
RT   "Isolation and sequence analysis of cDNAs for the major potato tuber
RT   protein, patatin.";
RL   Nucleic Acids Res. 12:7987-8000(1984).
DR   EMBL; X01125; CAA25592.1; -.
DR   PIR; S51596; S51596.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Signal.
FT   SIGNAL        1     23       Potential.
FT   CHAIN        24    386       Potential.
SQ   SEQUENCE   386 AA;  42465 MW;  178107C161B7DEBD CRC64;

  Query Match             55.4%;  Score 1033;  DB 2;  Length 386;
  Best Local Similarity   89.6%;  Pred. No. 7.5e-62;
  Matches  199;  Conservative   10;  Mismatches   13;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              ||||||||||||||||:||||||||||||||||||:||| ||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||:|||||||||| ||| || | || ||||| :|||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNSSGSIFGPMYDGKYFLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||| |||||||||| ||||||||||||||||||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTYFPPHYFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||:|||||||||||| ||||||:||||:||| || ||||:
Db        205 NGDKYEFNLVDGAVATVGDPALLSLSVATKLAQVDPKFASIK 246


RESULT 4
Q7DMP8
ID   Q7DMP8      PRELIMINARY;      PRT;   386 AA.
AC   Q7DMP8;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Patatin precursor.
OS   Solanum brevidens.
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4115;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=95107249; PubMed=7808402;
RA   Banfalvi Z., Kostyal Z., Barta E.;
RT   "Solanum brevidens possesses a non-sucrose-inducible patatin gene.";
RL   Mol. Gen. Genet. 245:517-522(1994).
DR   EMBL; U09331; AAA66198.1; -.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
```

```
KW   Signal.
FT   SIGNAL       1     23       Potential.
FT   CHAIN       24    386       patatin.
SQ   SEQUENCE   386 AA;  42465 MW;  178107C161B7DEBD CRC64;

  Query Match             55.4%;  Score 1033;  DB 2;  Length 386;
  Best Local Similarity   89.6%;  Pred. No. 7.5e-62;
  Matches  199;  Conservative   10;  Mismatches   13;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              ||||||||||||||||:||||||||||||||||||:||| ||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||||:|||||||||| ||| || | || ||||| :|||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNSSGSIFGPMYDGKYFLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||||| |||||||||| ||||||||||||||||||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTYFPPHYFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||:|||||||||||| ||||||:||||:||| || ||||:
Db        205 NGDKYEFNLVDGAVATVGDPALLSLSVATKLAQVDPKFASIK 246


RESULT 5
PAT3_SOLTU
ID   PAT3_SOLTU     STANDARD;      PRT;   386 AA.
AC   P11768;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
DE   Patatin class I precursor (Potato tuber protein).
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=cv. Superior;
RX   MEDLINE=88226014; PubMed=3371664; DOI=10.1016/0378-1119(88)90577-X;
RA   Mignery G.A., Pikaard C.S., Park W.D.;
RT   "Molecular characterization of the patatin multigene family of
RT   potato.";
RL   Gene 62:27-44(1988).
CC   -!- FUNCTION: Patatin may have a dual role as a somatic storage
CC       protein and as an enzyme involved in host resistance. This tuber
CC       protein represents approximately 40% of the total protein in
CC       mature tubers.
CC   -!- MISCELLANEOUS: There is strong evidence that patatin is a
CC       lipolytic acyl hydrolase (LAH), an activity which is thought to be
CC       involved in the response of tubers to pathogens.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M18880; AAA33819.1; -.
DR   EMBL; M18883; AAA33831.1; -.
DR   PIR; A29810; A29810.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Glycoprotein; Hydrolase; Multigene family; Signal; Storage protein.
FT   SIGNAL       1     23
FT   CHAIN       24    386       Patatin class I.
FT   CARBOHYD   115    115       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   386 AA;  42651 MW;  7A20AFAAACD85229 CRC64;

  Query Match             54.5%;  Score 1017;  DB 1;  Length 386;
  Best Local Similarity   87.9%;  Pred. No. 9.1e-61;
  Matches  196;  Conservative   13;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||||:|||||||||| ||| || |:|| ||||||:||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIIGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||||| |||||||||| ||||||| ||||||:|:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHYFITHT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||| |||||||| |||| ||||||:||||||||:||||:||:
Db        204 SNGDIYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 6
PAT0_SOLTU
ID   PAT0_SOLTU     STANDARD;      PRT;   386 AA.
AC   P07745;
DT   01-AUG-1988 (Rel. 08, Created)
DT   01-AUG-1988 (Rel. 08, Last sequence update)
DT   01-APR-1990 (Rel. 14, Last annotation update)
DE   Patatin precursor (Potato tuber protein).
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=cv. Maris Piper 6094;
RX   MEDLINE=86232596; PubMed=3714488;
RA   Bevan M., Barker R., Goldsbrough A., Jarvis M., Kavanagh T.,
RA   Iturriaga G.;
RT   "The structure and transcription start site of a major potato tuber
RT   protein gene.";
RL   Nucleic Acids Res. 14:4625-4638(1986).
CC   -!- FUNCTION: Patatin may have a dual role as a somatic storage
CC       protein and as an enzyme involved in host resistance. This tuber
CC       protein represents approximately 40% of the total protein in
CC       mature tubers.
CC   -!- MISCELLANEOUS: There is strong evidence that patatin is a
CC       lipolytic acyl hydrolase (LAH), an activity which is thought to be
CC       involved in the response of tubers to pathogens.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X03956; CAA27588.1; -.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Glycoprotein; Hydrolase; Multigene family; Signal; Storage protein.
FT   SIGNAL       1     23
FT   CHAIN       24    386       Patatin.
FT   CARBOHYD   115    115       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   386 AA;  42490 MW;  CF455970CCDB10B7 CRC64;

  Query Match             54.4%;  Score 1014;  DB 1;  Length 386;
  Best Local Similarity   88.3%;  Pred. No. 1.5e-60;
  Matches  196;  Conservative   12;  Mismatches   14;  Indels    0;  Gaps    0;
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Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              ||||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||:|||||||||| ||| || | ||:||||||:||||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIFGPRYDGKYLLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||| ||:|||||||| ||||||| |||||:|||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAESPQLDAKMYDICYSTAAAPIYFPPHHFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||  |||||||||||||| ||||||:|||||||| ||||:||:
Db        205 NGATYEFNLVDGAVATVGDPALLSLSVATRLAQDDPAFSSIK 246


RESULT 7
PAT2_SOLTU
ID   PAT2_SOLTU     STANDARD;      PRT;   386 AA.
AC   P15477;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
DE   Patatin B2 precursor (Potato tuber protein).
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=cv. Bintje;
RA   Stiekema W.J., Heidekamp F., Dirkse W.G., van Beckum J., de Haan P.,
RA   ten Bosch C., Louwerse J.D.;
RT   "Molecular cloning and analysis of four potato tuber mRNAs.";
RL   Plant Mol. Biol. 11:255-269(1988).
CC   -!- FUNCTION: Patatin may have a dual role as a somatic storage
CC       protein and as an enzyme involved in host resistance. This tuber
CC       protein represents approximately 40% of the total protein in
CC       mature tubers.
CC   -!- MISCELLANEOUS: There is strong evidence that patatin is a
CC       lipolytic acyl hydrolase (LAH), an activity which is thought to be
CC       involved in the response of tubers to pathogens.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X13178; CAA31575.1; -.
DR   PIR; S05592; S05592.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Glycoprotein; Hydrolase; Multigene family; Signal; Storage protein.
FT   SIGNAL       1     23
FT   CHAIN        24    386       Patatin B2.
FT   CARBOHYD     115   115       N-linked (GlcNAc. . .) (Potential).
FT   CARBOHYD     325   325       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   386 AA;  42612 MW;  5C0518B68A282405 CRC64;

  Query Match             54.4%;  Score 1014;  DB 1;  Length 386;
  Best Local Similarity   88.3%;  Pred. No. 1.5e-60;
  Matches  197;  Conservative   12;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||| ||| || |||| ||||||:||||||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSILGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||| |||||||||| ||||||| |||||:|||:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHHFVTHT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||  |||||||||||||| ||||||:||||||||:||||:||:
Db        204 SNGARYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 8
Q41487
ID   Q41487      PRELIMINARY;      PRT;   386 AA.
AC   Q41487; Q41473;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Patatin.
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Kang M.J., Yang M.S.;
RT   "Nucleotide Sequences of Class I Patatin cDNA from Potato Cultivated
RT   in Korea.";
RL   Plant Mol. Biol. 0:0-0(0).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Yang M.S.;
RL   Submitted (NOV-1993) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; Z27221; CAA81735.1; -.
DR   PIR; A23634; A23634.
DR   PIR; T07592; T07592.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   386 AA;  42628 MW;  A58E1DC9529BF0EF CRC64;

  Query Match             53.8%;  Score 1004;  DB 2;  Length 386;
  Best Local Similarity   89.2%;  Pred. No. 7e-60;
  Matches  198;  Conservative    6;  Mismatches   18;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              | |||||||||||||:|||| ||||||||||:||||||||||||||||||||||||||
Db         25 LEEMVTVLSIDGGGIKGIIPGTILEFLEGQLQKMDNNADARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||| ||||||||| ||| |      ||||||||||||||||||||
Db         85 MITTPNENNRPFAAANEIVPFYFEHGPHIFNSSTGQFFRKYDGKYLMQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||| |||||||||| |||||||||||||||| |||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPTYFPPHYFATNTI 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||:|| ||||||||||||||||:||||| ||:||||||||
Db        205 NGDKYELNLVDGAVATVADPALLSVSVATRRAQEDPAFASIR 246


RESULT 9
PAT1_SOLTU
ID   PAT1_SOLTU     STANDARD;      PRT;   377 AA.
AC   P15476;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   15-JUL-1999 (Rel. 38, Last annotation update)
```

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DE   Patatin B1 precursor (Potato tuber protein) (Fragment).
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=cv. Bintje;
RA   Stiekema W.J., Heidekamp F., Dirkse W.G., van Beckum J., de Haan P.,
RA   ten Bosch C., Louwerse J.D.;
RT   "Molecular cloning and analysis of four potato tuber mRNAs.";
RL   Plant Mol. Biol. 11:255-269(1988).
CC   -!- FUNCTION: Patatin may have a dual role as a somatic storage
CC       protein and as an enzyme involved in host resistance. This tuber
CC       protein represents approximately 40% of the total protein in
CC       mature tubers.
CC   -!- MISCELLANEOUS: There is strong evidence that patatin is a
CC       lipolytic acyl hydrolase (LAH), an activity which is thought to be
CC       involved in the response of tubers to pathogens.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X13179; CAA31576.1; -.
DR   PIR; S05593; S05593.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
KW   Glycoprotein; Hydrolase; Multigene family; Signal; Storage protein.
FT   NON_TER       1      1
FT   SIGNAL        <1     14
FT   CHAIN         15     377       Patatin B1.
FT   CARBOHYD      106    106       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   377 AA;  41615 MW;  A72307D49DD6AFC3 CRC64;

  Query Match             53.7%;  Score 1002;  DB 1;  Length 377;
  Best Local Similarity   87.0%;  Pred. No. 9.2e-60;
  Matches  194;  Conservative   13;  Mismatches   16;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         15 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 74

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||| ||| || | ||:|||||:||||||||||
Db         75 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIFGPRYDGKYLLQVLQEKLGETRV 134

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||| |||||||||| || |||| |||||:|||:|
Db        135 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSIAAAPIYFPPHHFVTHT 194

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||  |||||||| |||| ||||||:||||||||:||||:||:
Db        195 SNGATYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 237


RESULT 10
Q41467
ID   Q41467      PRELIMINARY;      PRT;   386 AA.
AC   Q41467;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Potato patatin.
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Stiekema W.J., Heidekamp F., Dirkse W.G., van Beckum J., de Haan P.,
RA   ten Bosch C., Louwerse J.D.;
RT   "Molecular cloning and analysis of four potato tuber mRNAs.";
RL   Plant Mol. Biol. 11:255-269(1988).
DR   EMBL; M21879; AAA33828.1; -.
DR   PIR; B26017; B26017.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   386 AA;  42626 MW;  F38A08CA08696CD5 CRC64;

  Query Match             53.7%;  Score 1002;  DB 2;  Length 386;
  Best Local Similarity   87.0%;  Pred. No. 9.5e-60;
  Matches  194;  Conservative   13;  Mismatches   16;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||| ||| || | ||:|||||:||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIFGPRYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||| |||||||||| || |||| |||||:|||:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSIAAAPIYFPPHHFVTHT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||  |||||||| |||| ||||||:||||||||:||||:||:
Db        204 SNGATYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 11
Q8LSC1
ID   Q8LSC1      PRELIMINARY;      PRT;   387 AA.
AC   Q8LSC1;
DT   01-OCT-2002 (TrEMBLrel. 22, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Patatin storage protein.
OS   Solanum chacoense (Chaco potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4108;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Huang J., Xie C.H., Liu J.;
RT   "Isolation and characterization of a cDNA of patatin, the major
RT   soluble protein of potato tuber.";
RL   Vestn. Sarat. Gos. Akad. Prava 1:65-70(2001).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Xie C.H., Huang J., Liu J.;
RL   Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF498099; AAM21657.1; -.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   387 AA;  42756 MW;  12A46972BC25541B CRC64;

  Query Match             53.4%;  Score 996.5;  DB 2;  Length 387;
  Best Local Similarity   86.6%;  Pred. No. 2.2e-59;
  Matches  194;  Conservative   13;  Mismatches   16;  Indels    1;  Gaps    1;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
```

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              :| ||||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db          24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy         204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQ-ILGPKYDGKYLMQVLQEKLGETR 262
               |||:|||||||| |||||: |||||||| ||| ||: | || ||| ||:||||||||||
Db          84 AMITTPNENNRPIAAAKDFVPFYFEHGPHIFNSSGRPIFGPMYDGNYLLQVLQEKLGETR 143

Qy         263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
               |||||||| |||||||||||||||||||| |||||||||| ||||||| |||||||:|:
Db         144 VHQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPMYFPPHYFITH 203

Qy         323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
               ||||| |||||||||||| |||||||:||||||:||||:||:
Db         204 TSNGDIYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 247


RESULT 12
Q7DMC7
ID   Q7DMC7      PRELIMINARY;      PRT;   263 AA.
AC   Q7DMC7;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Patatin homolog (Fragment).
OS   Nicotiana tabacum (Common tobacco).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Nicotiana.
OX   NCBI_TaxID=4097;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=93120883; PubMed=1477554;
RA   Drews G.N., Beals T.P., Bui A.Q., Goldberg R.B.;
RT   "Regional and cell-specific gene expression patterns during petal
RT   development.";
RL   Plant Cell 4:1383-1404(1992).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Beals T.P., Goldberg R.B.;
RL   Submitted (AUG-1996) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; U68483; AAB08427.1; -.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
FT   NON_TER     263    263
SQ   SEQUENCE   263 AA;  28225 MW;  66D617A7F0C7FBF3 CRC64;

  Query Match             41.7%;  Score 778.5;  DB 2;  Length 263;
  Best Local Similarity   67.1%;  Pred. No. 8e-45;
  Matches  151;  Conservative   31;  Mismatches   36;  Indels    7;  Gaps    4;

Qy         145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
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Db          25 VGEIATVLSIDGGGIKGIIPATVLSFLESQLQELDNNEDARLADYFDVIAGTSTGGILTT 84

Qy         205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSG---QILGPKYDGKYLMQVLQEKLGET 261
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Db          85 MISAPNEKGRPFSAAKDIVSFYFEHGPKIF-PQGVWPPILGPKYDGKYLHKVLEDKLGET 143

Qy         262 RVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVT 321
               |:|| || ||| :||:|  :|:||||| :|||| ||||| || | ||||||||||:||
Db         144 RLHQTLTNVVIPTFDMKKFQPIIFTKSEIANSPHLDAKMSDICYGTAAAPTYFPPYYFEN 203

Qy         322 NTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
               :   |:::||||:|| |  | :|||:::|  |:    ||: |||:
Db         204 DDGKGNQHEFNLIDGGVVAV-NPALIAVSTVTK--SVDPSVASIK 245


RESULT 13
O24152
ID   O24152      PRELIMINARY;      PRT;   390 AA.
AC   O24152;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Patatin homolog.
OS   Nicotiana tabacum (Common tobacco).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Nicotiana.
OX   NCBI_TaxID=4097;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=93120883; PubMed=1477554;
RA   Drews G.N., Beals T.P., Bui A.Q., Goldberg R.B.;
RT   "Regional and cell-specific gene expression patterns during petal
RT   development.";
RL   Plant Cell 4:1383-1404(1992).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Beals Thomas P., Goldberg R.B.;
RL   Submitted (AUG-1996) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; U68484; AAB08428.1; -.
DR   PIR; T03841; T03841.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   390 AA;  42499 MW;  9A70F5D9CD85DB5F CRC64;

  Query Match             41.7%;  Score 778.5;  DB 2;  Length 390;
  Best Local Similarity   67.1%;  Pred. No. 1.4e-44;
  Matches  151;  Conservative   31;  Mismatches   36;  Indels    7;  Gaps    4;

Qy         145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
               :||: |||||||||||:||||||:| ||| ||||:||| |||||||||||| ||||||:||
Db          25 VGEIATVLSIDGGGIKGIIPATVLSFLESQLQELDNNEDARLADYFDVIAGTSTGGILTT 84

Qy         205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSG---QILGPKYDGKYLMQVLQEKLGET 261
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Db          85 MISAPNEKGRPFSAAKDIVSFYFEHGPKIF-PQGVWPPILGPKYDGKYLHKVLEDKLGET 143

Qy         262 RVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVT 321
               |:|| || ||| :||:|  :|:||||| :|||| ||||| || | ||||||||||:||
Db         144 RLHQTLTNVVIPTFDMKKFQPIIFTKSEIANSPHLDAKMSDICYGTAAAPTYFPPYYFEN 203

Qy         322 NTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
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Db         204 DDGKGNQHEFNLIDGGVVAV-NPALIAVSTVTK--SVDPSVASIK 245


RESULT 14
Q8LBT5
ID   Q8LBT5      PRELIMINARY;      PRT;   383 AA.
AC   Q8LBT5;
DT   01-OCT-2002 (TrEMBLrel. 22, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Patatin-like protein.
OS   Arabidopsis thaliana (Mouse-ear cress).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC   eurosids II; Brassicales; Brassicaceae; Arabidopsis.
OX   NCBI_TaxID=3702;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22088475; PubMed=12093376;
RA   Haas B.J., Volfovsky N., Town C.D., Troukhan M., Alexandrov N.,
RA   Feldmann K.A., Flavell R.B., White O., Salzberg S.L.;
RT   "Full-length messenger RNA sequences greatly improve genome
RT   annotation.";
RL   Genome Biol. 3:RESEARCH0029-RESEARCH0029(2002).
RN   [2]
RP   SEQUENCE FROM N.A.
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RA   Brover V., Troukhan M., Alexandrov N., Lu Y.-P., Flavell R.,
RA   Feldmann K.;
RL   Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY087005; AAM64566.1; -.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   383 AA;  42098 MW;  CE9C9E52DE49FC0C CRC64;

  Query Match             32.9%;  Score 614;  DB 2;  Length 383;
  Best Local Similarity   50.0%;  Pred. No. 1.9e-33;
  Matches  126;  Conservative   42;  Mismatches   66;  Indels   18;  Gaps    6;

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
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Db          1 MENKSPSKKNK----PPSCGSLVTILSLDGGGVRGIIAGVILAFLEKQLQELDGE-EARL 55

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIF-NPSGQIL---- 241
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Db         56 ADYFDVIAGTSTGGLVTAMLTVPDETGRPHFAAKDIVPFYLEHCPKIFPQPTGVLALLPK 115

Qy        242 ------GPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPE 295
                   |||| |||| :| : |||||:|| || :|| :|||| :| ||:   |   |
Db        116 LPKLLSGPKYSGKYLRNLLSKLLGETRLHQTLTNIVIPTFDIKKLQPTIFSSYQLLVDPS 175

Qy        296 LDAKMYDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSI-SVATR 354
              || |: ||   |:||||:||||||    | |:: ||||||||| |  :| |::: :|: :
Db        176 LDVKVSDICIGTSAAPTFFPPHYFSNEDSQGNKTEFNLVDGAV-TANNPTLVAMTAVSKQ 234

Qy        355 LAQKDPAFASIR 366
              : : :|    ::
Db        235 IVKNNPDMGKLK 246


RESULT 15
O23179
ID   O23179      PRELIMINARY;      PRT;   414 AA.
AC   O23179;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Patatin-like protein.
GN   Name=C7A10.290; Synonyms=AT4g37070;
OS   Arabidopsis thaliana (Mouse-ear cress).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
OC   eurosids II; Brassicales; Brassicaceae; Arabidopsis.
OX   NCBI_TaxID=3702;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Bevan M., Terryn N., Vos P., Heijnen L., Mewes H.W., Mayer K.F.X.,
RA   Schueller C.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RA   EU Arabidopsis sequencing project;
RL   Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RA   EU Arabidopsis sequencing project;
RL   Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; Z99707; CAB16787.1; -.
DR   EMBL; AL161590; CAB80373.1; -.
DR   PIR; H85437; H85437.
DR   HSSP; Q8LPW4; 1OXW.
DR   GO; GO:0003824; F:catalytic activity; IEA.
DR   GO; GO:0045735; F:nutrient reservoir activity; IEA.
DR   InterPro; IPR002641; Patatin.
DR   Pfam; PF01734; Patatin; 1.
SQ   SEQUENCE   414 AA;  45823 MW;  078E35777043AF43 CRC64;

  Query Match             32.9%;  Score 614;  DB 2;  Length 414;
  Best Local Similarity   50.0%;  Pred. No. 2.1e-33;
  Matches  126;  Conservative   42;  Mismatches   66;  Indels   18;  Gaps    6;

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
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Db          1 MENKSPSKKNK----PPSCGSLVTILSLDGGGVRGIIAGVILAFLEKQLQELDGE-EARL 55

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIF-NPSGQIL---- 241
              ||||||| |||||||:|||:: |:|  ||  |||:||||| || |:||  |:| :
Db         56 ADYFDVIAGTSTGGLVTAMLTVPDETGRPHFAAKDIVPFYLEHCPKIFPQPTGVLALLPK 115

Qy        242 ------GPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPE 295
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Db        116 LPKLLSGPKYSGKYLRNLLSKLLGETRLHQTLTNIVIPTFDIKKLQPTIFSSYQLLVDPS 175

Qy        296 LDAKMYDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSI-SVATR 354
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Db        176 LDVKVSDICIGTSAAPTFFPPHYFSNEDSQGNKTEFNLVDGAV-TANNPTLVAMTAVSKQ 234

Qy        355 LAQKDPAFASIR 366
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Db        235 IVKNNPDMGKLK 246


Search completed: April  8, 2005, 07:56:13
Job time : 185 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:29:54 ; Search time 42 Seconds
(without alignments)
650.513 Million cell updates/sec

Title: US-10-658-180-247
Perfect score: 1865
Sequence: 1 SLNYKKMLLLSLGTGTTSEF.....LSISVATRLAQKDPAFASIR 366

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1865	100.0	366	4	US-09-755-630B-247	Sequence 247, App
2	1865	100.0	366	4	US-09-755-274-21	Sequence 21, Appl
3	1865	100.0	389	4	US-09-755-630B-271	Sequence 271, App
4	1865	100.0	389	4	US-09-755-274-33	Sequence 33, Appl
5	1769	94.9	389	4	US-09-755-630B-275	Sequence 275, App
6	1769	94.9	389	4	US-09-755-274-35	Sequence 35, Appl
7	1753	94.0	366	4	US-09-755-630B-259	Sequence 259, App
8	1753	94.0	366	4	US-09-755-274-27	Sequence 27, Appl
9	1645	88.2	366	4	US-09-755-630B-251	Sequence 251, App
10	1645	88.2	366	4	US-09-755-274-23	Sequence 23, Appl
11	1544	82.8	366	4	US-09-755-630B-255	Sequence 255, App
12	1544	82.8	366	4	US-09-755-274-25	Sequence 25, Appl
13	1480	79.4	366	4	US-09-755-630B-263	Sequence 263, App
14	1480	79.4	366	4	US-09-755-274-29	Sequence 29, Appl
15	1139	61.1	367	4	US-09-755-630B-7	Sequence 7, Appli
16	1139	61.1	367	4	US-09-755-274-41	Sequence 41, Appl
17	1139	61.1	386	4	US-09-755-630B-2	Sequence 2, Appli
18	1139	61.1	386	4	US-09-755-630B-265	Sequence 265, App
19	1139	61.1	386	4	US-09-755-630B-286	Sequence 286, App
20	1139	61.1	386	4	US-09-755-274-1	Sequence 1, Appli
21	1139	61.1	386	4	US-09-755-274-31	Sequence 31, Appl
22	1139	61.1	386	4	US-09-755-274-39	Sequence 39, Appl
23	1139	61.1	452	4	US-09-755-630B-6	Sequence 6, Appli
24	1139	61.1	452	4	US-09-755-274-40	Sequence 40, Appl
25	1030.5	55.3	383	1	US-07-936-163-4	Sequence 4, Appli
26	1019	54.6	386	4	US-09-755-630B-279	Sequence 279, App
27	1019	54.6	386	4	US-09-755-274-6	Sequence 6, Appli
28	1017	54.5	386	4	US-09-755-630B-278	Sequence 278, App
29	1017	54.5	386	4	US-09-755-274-5	Sequence 5, Appli
30	1014	54.4	381	1	US-07-936-163-3	Sequence 3, Appli
31	1014	54.4	386	4	US-09-755-630B-282	Sequence 282, App
32	1014	54.4	386	4	US-09-755-274-4	Sequence 4, Appli
33	1013	54.3	364	4	US-09-755-630B-281	Sequence 281, App
34	1013	54.3	364	4	US-09-755-274-3	Sequence 3, Appli
35	1001.5	53.7	365	4	US-09-755-630B-280	Sequence 280, App
36	1001.5	53.7	365	4	US-09-755-274-2	Sequence 2, Appli
37	528.5	28.3	408	3	US-09-074-912-2	Sequence 2, Appli
38	528.5	28.3	408	3	US-09-074-912-4	Sequence 4, Appli
39	528.5	28.3	408	3	US-09-290-136-2	Sequence 2, Appli
40	528.5	28.3	408	3	US-09-290-136-4	Sequence 4, Appli
41	528.5	28.3	408	4	US-09-755-630B-287	Sequence 287, App
42	528.5	28.3	408	4	US-09-755-274-7	Sequence 7, Appli
43	523	28.0	410	4	US-09-755-630B-290	Sequence 290, App
44	523	28.0	410	4	US-09-755-274-10	Sequence 10, Appl
45	520	27.9	337	4	US-09-755-630B-293	Sequence 293, App

ALIGNMENTS

RESULT 1
US-09-755-630B-247
; Sequence 247, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630B
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 295
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 247
; LENGTH: 366
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-247

Query Match 100.0%; Score 1865; DB 4; Length 366;
Best Local Similarity 100.0%; Pred. No. 1.6e-169;
Matches 366; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
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Db          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
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Db        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
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Db        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360

Qy        361 AFASIR 366
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Db        361 AFASIR 366


RESULT 2
US-09-755-274-21
; Sequence 21, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 21
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(366)
;   OTHER INFORMATION: Permutein protein encoded from pMON37402 sequence
US-09-755-274-21

  Query Match             100.0%;  Score 1865;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-169;
  Matches  366;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
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Db          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360

Qy        361 AFASIR 366
                ||||||
Db        361 AFASIR 366


RESULT 3
US-09-755-630B-271
; Sequence 271, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 271
;   LENGTH: 389
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-271

  Query Match             100.0%;  Score 1865;  DB 4;  Length 389;
  Best Local Similarity   100.0%;  Pred. No. 1.7e-169;
  Matches  366;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 83

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 143

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 203

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        204 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 263

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        264 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 323

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        324 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 383

Qy        361 AFASIR 366
                ||||||
Db        384 AFASIR 389


RESULT 4
US-09-755-274-33
; Sequence 33, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 33
;   LENGTH: 389
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(389)
;   OTHER INFORMATION: Permutein protein encoded by pMON40703 sequence
US-09-755-274-33

  Query Match             100.0%;  Score 1865;  DB 4;  Length 389;
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  Best Local Similarity   100.0%;  Pred. No. 1.7e-169;
  Matches  366;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 83

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 143

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 203

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        204 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 263

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        264 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 323

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        324 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 383

Qy        361 AFASIR 366
              ||||||
Db        384 AFASIR 389


RESULT 5
US-09-755-630B-275
; Sequence 275, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 275
;   LENGTH: 389
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-275

  Query Match             94.9%;  Score 1769;  DB 4;  Length 389;
  Best Local Similarity   96.7%;  Pred. No. 2.5e-160;
  Matches  348;  Conservative    4;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          7 MLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 66
              ::|: :   |||    ||||||||||||||||||||||||||||||||||||||||||||
Db          8 LILIFMILATTSSTFATYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 67

Qy         67 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 126
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         68 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 127

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        128 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 187

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 247

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 306
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        248 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 307

Qy        307 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        308 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 367


RESULT 6
US-09-755-274-35
; Sequence 35, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 35
;   LENGTH: 389
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(389)
;   OTHER INFORMATION: Permutein protein encoded by pMON40705
US-09-755-274-35

  Query Match             94.9%;  Score 1769;  DB 4;  Length 389;
  Best Local Similarity   96.7%;  Pred. No. 2.5e-160;
  Matches  348;  Conservative    4;  Mismatches    8;  Indels    0;  Gaps    0;

Qy          7 MLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 66
              ::|: :   |||    ||||||||||||||||||||||||||||||||||||||||||||
Db          8 LILIFMILATTSSTFATYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 67

Qy         67 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 126
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         68 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 127

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        128 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 187

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 247

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 306
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        248 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 307

Qy        307 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        308 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 367


RESULT 7
US-09-755-630B-259
; Sequence 259, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
```

```
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 259
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-259

  Query Match            94.0%;  Score 1753;  DB 4;  Length 366;
  Best Local Similarity   99.7%;  Pred. No. 7.7e-159;
  Matches  343;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         23 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 82
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 60

Qy         83 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRANKASYGP 142
              ||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||
Db         61 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRSNKASYGP 120

Qy        143 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 202
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 180

Qy        203 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 240

Qy        263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 300

Qy        323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||||
Db        301 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 344


RESULT 8
US-09-755-274-27
; Sequence 27, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 27
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(366)
;   OTHER INFORMATION: Permutein protein encoded by pMON37407 sequence
US-09-755-274-27

  Query Match            94.0%;  Score 1753;  DB 4;  Length 366;
  Best Local Similarity   99.7%;  Pred. No. 7.7e-159;
  Matches  343;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         23 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 82
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 60

Qy         83 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRANKASYGP 142
              ||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||
Db         61 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRSNKASYGP 120

Qy        143 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 202
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 180

Qy        203 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 240

Qy        263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 300

Qy        323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||||
Db        301 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 344


RESULT 9
US-09-755-630B-251
; Sequence 251, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 251
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-251

  Query Match            88.2%;  Score 1645;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-148;
  Matches  321;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         46 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 105

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        106 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 165

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        166 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 225

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        226 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 285

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 345
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Qy        301 YDISYSTAAAPTYFPPHYFVT 321
              ||||||||||||||||||||
Db        346 YDISYSTAAAPTYFPPHYFVT 366


RESULT 10
US-09-755-274-23
; Sequence 23, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 23
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(366)
;   OTHER INFORMATION: Permutein protein encoded by pMON37405 sequence
US-09-755-274-23

  Query Match             88.2%;  Score 1645;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-148;
  Matches  321;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         46 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 105

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        106 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 165

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        166 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 225

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        226 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 285

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 345

Qy        301 YDISYSTAAAPTYFPPHYFVT 321
              ||||||||||||||||||||
Db        346 YDISYSTAAAPTYFPPHYFVT 366


RESULT 11
US-09-755-630B-255
; Sequence 255, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 255
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-255

  Query Match             82.8%;  Score 1544;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 6.9e-139;
  Matches  303;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 123

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 183

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 243

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        244 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 303

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 363

Qy        301 YDI 303
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Db        364 YDI 366


RESULT 12
US-09-755-274-25
; Sequence 25, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 25
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(366)
;   OTHER INFORMATION: Permutein protein encoded by pMON37406
US-09-755-274-25

  Query Match             82.8%;  Score 1544;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 6.9e-139;
  Matches  303;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         64 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 123

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        124 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 183
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Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        184 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 243

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        244 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 303

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        304 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 363

Qy        301 YDI 303
              |||
Db        364 YDI 366


RESULT 13
US-09-755-630B-263
; Sequence 263, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 263
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-263

  Query Match             79.4%;  Score 1480;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-133;
  Matches  291;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         76 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 135
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Db          1 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 60

Qy        136 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 195
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 120

Qy        196 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 255
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 180

Qy        256 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 315
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 240

Qy        316 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 291


RESULT 14
US-09-755-274-29
; Sequence 29, Application US/09755274
; Patent No. 6657046
; GENERAL INFORMATION:
;  APPLICANT: Alibhai, Murtaza
;  APPLICANT:  Rydel, Timothy
;  TITLE OF INVENTION: Insect Inhibitory Lipid Acyl Hydrolases
;  FILE REFERENCE: 38-21 (51842)B
;  CURRENT APPLICATION NUMBER: US/09/755,274
;  CURRENT FILING DATE:  2001-01-05
;  NUMBER OF SEQ ID NOS: 60
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 29
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: synthetic
;   FEATURE:
;   NAME/KEY: Protein
;   LOCATION: (1)..(366)
;   OTHER INFORMATION: Permutein protein encoded by pMON37408
US-09-755-274-29

  Query Match             79.4%;  Score 1480;  DB 4;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-133;
  Matches  291;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         76 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 135
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 60

Qy        136 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 195
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Db         61 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 120

Qy        196 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 255
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Db        121 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 180

Qy        256 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 315
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 240

Qy        316 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 291


RESULT 15
US-09-755-630B-7
; Sequence 7, Application US/09755630B
; Patent No. 6639054
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630B
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 295
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 7
;   LENGTH: 367
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630B-7

  Query Match             61.1%;  Score 1139;  DB 4;  Length 367;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-100;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
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Db            5 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 64

Qy          204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           65 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 124

Qy          264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          125 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 184

Qy          324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
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Db          185 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 227
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:56:20 ; Search time 55 Seconds
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Perfect score: 1865
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Searched: 1418010 seqs, 331997259 residues

Total number of hits satisfying chosen parameters: 1418010

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA:*
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19: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
20: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1865	100.0	366	10	US-09-755-630A-247	Sequence 247, App
2	1865	100.0	389	10	US-09-755-630A-271	Sequence 271, App
3	1769	94.9	389	10	US-09-755-630A-275	Sequence 275, App
4	1753	94.0	366	10	US-09-755-630A-259	Sequence 259, App
5	1645	88.2	366	10	US-09-755-630A-251	Sequence 251, App
6	1544	82.8	366	10	US-09-755-630A-255	Sequence 255, App
7	1480	79.4	366	10	US-09-755-630A-263	Sequence 263, App
8	1139	61.1	367	10	US-09-755-630A-7	Sequence 7, Appli
9	1139	61.1	386	10	US-09-755-630A-2	Sequence 2, Appli
10	1139	61.1	386	10	US-09-755-630A-265	Sequence 265, App
11	1139	61.1	386	10	US-09-755-630A-286	Sequence 286, App
12	1139	61.1	452	10	US-09-755-630A-6	Sequence 6, Appli
13	1019	54.6	386	10	US-09-755-630A-279	Sequence 279, App
14	1017	54.5	386	10	US-09-755-630A-278	Sequence 278, App
15	1014	54.4	386	10	US-09-755-630A-282	Sequence 282, App
16	1013	54.3	364	10	US-09-755-630A-281	Sequence 281, App
17	1001.5	53.7	365	10	US-09-755-630A-280	Sequence 280, App
18	618.5	33.2	335	15	US-10-424-599-143308	Sequence 143308,
19	609.5	32.7	405	16	US-10-437-963-129647	Sequence 129647,
20	585	31.4	387	16	US-10-437-963-177823	Sequence 177823,
21	579	31.0	400	14	US-10-150-429B-1	Sequence 1, Appli
22	565.5	30.3	438	15	US-10-425-114-72032	Sequence 72032, A
23	565.5	30.3	438	15	US-10-425-114-72035	Sequence 72035, A
24	565.5	30.3	448	15	US-10-425-114-65072	Sequence 65072, A
25	545	29.2	442	16	US-10-437-963-138254	Sequence 138254,
26	545	29.2	1275	16	US-10-437-963-199835	Sequence 199835,
27	544.5	29.2	431	16	US-10-437-963-108232	Sequence 108232,
28	537.5	28.8	430	16	US-10-437-963-109130	Sequence 109130,
29	534.5	28.7	390	14	US-10-034-937-4	Sequence 4, Appli
30	534.5	28.7	390	14	US-10-034-937-10	Sequence 10, Appl
31	533	28.6	390	14	US-10-034-937-12	Sequence 12, Appl
32	531.5	28.5	390	14	US-10-034-937-38	Sequence 38, Appl
33	529.5	28.4	390	14	US-10-034-937-8	Sequence 8, Appli
34	528.5	28.3	387	14	US-10-034-937-42	Sequence 42, Appl
35	528.5	28.3	390	14	US-10-034-937-16	Sequence 16, Appl
36	528.5	28.3	390	14	US-10-034-937-20	Sequence 20, Appl
37	528.5	28.3	390	14	US-10-034-937-32	Sequence 32, Appl
38	528.5	28.3	390	14	US-10-034-937-34	Sequence 34, Appl
39	528.5	28.3	390	14	US-10-034-937-41	Sequence 41, Appl
40	528.5	28.3	407	14	US-10-034-937-43	Sequence 43, Appl
41	528.5	28.3	408	10	US-09-755-630A-287	Sequence 287, App
42	528.5	28.3	477	16	US-10-437-963-137697	Sequence 137697,
43	527.5	28.3	390	14	US-10-034-937-6	Sequence 6, Appli
44	527	28.3	386	14	US-10-034-937-2	Sequence 2, Appli
45	527	28.3	390	14	US-10-034-937-22	Sequence 22, Appl

ALIGNMENTS

RESULT 1
US-09-755-630A-247
; Sequence 247, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630A
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 293
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 247
; LENGTH: 366
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-247

Query Match 100.0%; Score 1865; DB 10; Length 366;
Best Local Similarity 100.0%; Pred. No. 2.7e-157;
Matches 366; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
```

```
Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360

Qy        361 AFASIR 366
              ||||||
Db        361 AFASIR 366
```

RESULT 2
US-09-755-630A-271
; Sequence 271, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630A
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 293
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 271
; LENGTH: 389
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-271

Query Match 100.0%; Score 1865; DB 10; Length 389;
Best Local Similarity 100.0%; Pred. No. 2.9e-157;
Matches 366; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 83

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 143

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 203

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        204 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 263

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        264 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 323

Qy        301 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        324 YDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDP 383

Qy        361 AFASIR 366
              ||||||
Db        384 AFASIR 389
```

RESULT 3
US-09-755-630A-275
; Sequence 275, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630A
; CURRENT FILING DATE: 2001-01-05
; PRIOR APPLICATION NUMBER: US 60/174,669
; PRIOR FILING DATE: 2000-01-06
; NUMBER OF SEQ ID NOS: 293
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 275
; LENGTH: 389
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-275

Query Match 94.9%; Score 1769; DB 10; Length 389;
Best Local Similarity 96.7%; Pred. No. 1e-148;
Matches 348; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

```
Qy          7 MLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 66
              ::|: :   |||    ||||||||||||||||||||||||||||||||||||||||||||||
Db          8 LILIFMILATTSSTFATYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDS 67

Qy         67 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 126
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         68 KNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKL 127

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 186
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        128 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARL 187

Qy        187 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        188 ADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 247

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 306
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        248 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYS 307

Qy        307 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        308 TAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 367
```

RESULT 4
US-09-755-630A-259
; Sequence 259, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
; APPLICANT: ALIBHAI, MURTAZA F.
; APPLICANT: ASTWOOD, JAMES D.
; APPLICANT: SAMPSON, HUGH A.
; APPLICANT: McWHERTER, CHARLES A.
; TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
; FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
; CURRENT APPLICATION NUMBER: US/09/755,630A

```
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 259
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-259

  Query Match             94.0%;  Score 1753;  DB 10;  Length 366;
  Best Local Similarity   99.7%;  Pred. No. 2.5e-147;
  Matches  343;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         23 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 82
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 TYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTAFQALDSKNNYLRVQENALTGTT 60

Qy         83 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRANKASYGP 142
              ||||||||||||||||||||||||||||||||||||||||||||||||||:|||||||
Db         61 TEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRSNKASYGP 120

Qy        143 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 202
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLL 180

Qy        203 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 240

Qy        263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 322
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTN 300

Qy        323 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        301 TSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 344


RESULT 5
US-09-755-630A-251
; Sequence 251, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 251
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-251

  Query Match             88.2%;  Score 1645;  DB 10;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1e-137;
  Matches  321;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db         46 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 105

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        106 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 165

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        166 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 225

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        226 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 285

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        286 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 345

Qy        301 YDISYSTAAAPTYFPPHYFVT 321
              |||||||||||||||||||||
Db        346 YDISYSTAAAPTYFPPHYFVT 366


RESULT 6
US-09-755-630A-255
; Sequence 255, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 255
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-255

  Query Match             82.8%;  Score 1544;  DB 10;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 1e-128;
  Matches  303;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db         64 SLNYKKMLLLSLGTGTTSEFDKTYTAKEAATWTAVHWMLVIQKMTDAASSYMTDYYLSTA 123

Qy         61 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        124 FQALDSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL 183

Qy        121 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        184 KRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDN 243

Qy        181 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        244 NADARLADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI 303

Qy        241 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db        304 LGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKM 363

Qy        301 YDI 303
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                |||
Db        364 YDI 366


RESULT 7
US-09-755-630A-263
; Sequence 263, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 263
;   LENGTH: 366
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-263

  Query Match             79.4%;  Score 1480;  DB 10;  Length 366;
  Best Local Similarity   100.0%;  Pred. No. 5e-123;
  Matches  291;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          76 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 135
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 NALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEALKRFAKLLSDRKKLRA 60

Qy         136 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 195
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 NKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGG 120

Qy         196 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 255
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         121 TSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQ 180

Qy         256 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 315
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         181 EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFP 240

Qy         316 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
               ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         241 PHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 291


RESULT 8
US-09-755-630A-7
; Sequence 7, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 7
;   LENGTH: 367
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-7

  Query Match             61.1%;  Score 1139;  DB 10;  Length 367;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-92;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           5 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 64

Qy         204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          65 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 124

Qy         264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         125 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 184

Qy         324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
               ||||||||||||||||||||||||||||||||||||||||||
Db         185 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 227


RESULT 9
US-09-755-630A-2
; Sequence 2, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 2
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Solanum tuberosum
US-09-755-630A-2

  Query Match             61.1%;  Score 1139;  DB 10;  Length 386;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-92;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
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Db          24 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 83

Qy         204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          84 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 143

Qy         264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         144 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 203

Qy         324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
               ||||||||||||||||||||||||||||||||||||||||||
Db         204 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 246


RESULT 10
US-09-755-630A-265
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; Sequence 265, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 265
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-265

  Query Match             61.1%;  Score 1139;  DB 10;  Length 386;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-92;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         24 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        204 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 246


RESULT 11
US-09-755-630A-286
; Sequence 286, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 286
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Solanum tuberosum
US-09-755-630A-286

  Query Match             61.1%;  Score 1139;  DB 10;  Length 386;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-92;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
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Db         24 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         84 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        144 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        204 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 246


RESULT 12
US-09-755-630A-6
; Sequence 6, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 452
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic polypeptide
US-09-755-630A-6

  Query Match             61.1%;  Score 1139;  DB 10;  Length 452;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-92;
  Matches  223;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         90 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 149

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        150 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 209

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        210 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 269

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||||||||||||||||||||||||||||||||||||||||||
Db        270 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 312


RESULT 13
US-09-755-630A-279
; Sequence 279, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
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;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 279
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Solanum tuberosum
US-09-755-630A-279

  Query Match            54.6%;  Score 1019;  DB 10;  Length 386;
  Best Local Similarity   88.7%;  Pred. No. 6e-82;
  Matches  197;  Conservative   10;  Mismatches   15;  Indels    0;  Gaps    0;

Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
              |||||||||||||||:||||||||||||||||:||| ||||||||||||||||||||||
Db         25 LGEMVTVLSIDGGGIKGIIPATILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
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Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNSSGSIFGPMYDGKYFLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
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Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMNDICYSTAAAPTYFPPHYFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
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Db        205 NGDKYEFNLVDGAVATVGDPALLSLSVRTKLAQVDPKFASIK 246


RESULT 14
US-09-755-630A-278
; Sequence 278, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 278
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Solanum tuberosum
US-09-755-630A-278

  Query Match            54.5%;  Score 1017;  DB 10;  Length 386;
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  Matches  196;  Conservative   13;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
              :| |||||||||||||:||||| ||||||||||:||| ||||||||||||||||||||
Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
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Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIIGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNT 323
              ||||||| |||||||||||||||||||.|||||||||| ||||||| ||||||:|:|
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHYFITHT 203

Qy        324 SNGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              |||| |||||||| |||| ||||||:|||||||:||||:||:
Db        204 SNGDIYEFNLVDGGVATVGDPALLSLSVATRLAQEDPAFSSIK 246


RESULT 15
US-09-755-630A-282
; Sequence 282, Application US/09755630A
; Publication No. US20030194399A1
; GENERAL INFORMATION:
;  APPLICANT: ALIBHAI, MURTAZA F.
;  APPLICANT:  ASTWOOD, JAMES D.
;  APPLICANT:  SAMPSON, HUGH A.
;  APPLICANT:  McWHERTER, CHARLES A.
;  TITLE OF INVENTION: PREPARATION OF DEALLERGENIZED PROTEINS AND PERMUTEINS
;  FILE REFERENCE: 11899.0217.NPUS00 (MOBT217)
;  CURRENT APPLICATION NUMBER: US/09/755,630A
;  CURRENT FILING DATE:  2001-01-05
;  PRIOR APPLICATION NUMBER: US 60/174,669
;  PRIOR FILING DATE: 2000-01-06
;  NUMBER OF SEQ ID NOS: 293
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 282
;   LENGTH: 386
;   TYPE: PRT
;   ORGANISM: Solanum tuberosum
US-09-755-630A-282

  Query Match            54.4%;  Score 1014;  DB 10;  Length 386;
  Best Local Similarity   88.3%;  Pred. No. 1.7e-81;
  Matches  197;  Conservative   12;  Mismatches   14;  Indels    0;  Gaps    0;

Qy        144 QLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLT 203
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Db         24 KLEEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLT 83

Qy        204 AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRV 263
              |||:|||||||||||:|||||||||| ||| || |||| ||||||:||||||||||||
Db         84 AMITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSILGPMYDGKYLLQVLQEKLGETRV 143

Qy        264 HQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDICYSTAAAPIYFPPHHFVTHT 323
              ||||||| |||||||||||||||||||||| |||||||| ||||||| ||||||:|:||
Db        144 HQALTEVAISSFDIKTNKPVIFTKSNLAKSPELDAKMYDICYSTAAAPIYFPPHFVTHT 203

Qy        324 SNGARYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 366
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Db        204 SNGARYEFNLVDGAVATVGDPALLSLSVATRLAQEDPAFSSIK 246


Search completed: April  8, 2005, 08:10:38
Job time : 56 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: April 8, 2005, 07:38:59 ; Search time 38 Seconds
(without alignments)
631.316 Million cell updates/sec

Title: US-10-658-180-247
Perfect score: 1865
Sequence: 1 SLNYKKMLLLSLGTGTTSEF.....LSISVATRLAQKDPAFASIR 366

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 288363 seqs, 65546468 residues

Total number of hits satisfying chosen parameters: 288363

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Pending_Patents_AA_New:*
1: /cgn2_6/ptodata/1/paa/PCT_NEW_COMB.pep:*
2: /cgn2_6/ptodata/1/paa/US06_NEW_COMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1014	54.4	386	7	US-11-061-894-14	Sequence 14, Appl
2	528.5	28.3	408	7	US-11-061-894-10	Sequence 10, Appl
3	528.5	28.3	408	7	US-11-061-894-12	Sequence 12, Appl
4	268.5	14.4	350	1	PCT-US05-07908-100	Sequence 100, App
5	242	13.0	378	1	PCT-US05-07908-18	Sequence 18, Appl
6	239.5	12.8	387	1	PCT-US05-07908-66	Sequence 66, Appl
7	234.5	12.6	308	1	PCT-US05-07908-166	Sequence 166, App
8	197	10.6	308	1	PCT-US05-07908-132	Sequence 132, App
9	165	8.8	462	1	PCT-US05-07908-36	Sequence 36, Appl
10	154	8.3	364	8	US-60-655-875-130981	Sequence 130981,
11	146.5	7.9	314	7	US-11-061-233-8	Sequence 8, Appli
12	146.5	7.9	314	7	US-11-061-894-8	Sequence 8, Appli
13	136.5	7.3	239	8	US-60-655-875-139557	Sequence 139557,
14	133.5	7.2	258	8	US-60-655-875-127287	Sequence 127287,
15	113	6.1	444	7	US-11-045-874-10	Sequence 10, Appl
16	106	5.7	140	8	US-60-655-875-158378	Sequence 158378,
17	105	5.6	3051	1	PCT-IB03-06509-3039	Sequence 3039, Ap
18	104	5.6	1682	6	US-10-450-763-37598	Sequence 37598, A
19	104	5.6	1682	6	US-10-450-763-44026	Sequence 44026, A
20	104	5.6	2159	6	US-10-450-763-44023	Sequence 44023, A
21	104	5.6	2503	6	US-10-450-763-37597	Sequence 37597, A
22	104	5.6	2503	6	US-10-450-763-43913	Sequence 43913, A
23	104	5.6	2871	6	US-10-450-763-37602	Sequence 37602, A
24	104	5.6	2871	6	US-10-450-763-43914	Sequence 43914, A
25	104	5.6	2871	6	US-10-450-763-44024	Sequence 44024, A
26	104	5.6	2891	6	US-10-450-763-37599	Sequence 37599, A
27	104	5.6	2891	6	US-10-450-763-43915	Sequence 43915, A
28	104	5.6	2891	6	US-10-450-763-44025	Sequence 44025, A
29	103.5	5.5	399	7	US-11-027-399-3323	Sequence 3323, Ap
30	103.5	5.5	399	7	US-11-027-843-3323	Sequence 3323, Ap
31	103.5	5.5	399	7	US-11-027-878-3323	Sequence 3323, Ap
32	103.5	5.5	399	7	US-11-028-169-3323	Sequence 3323, Ap
33	103.5	5.5	399	7	US-11-028-204-3323	Sequence 3323, Ap
34	103.5	5.5	399	7	US-11-027-877-3323	Sequence 3323, Ap
35	103.5	5.5	399	7	US-11-027-879-3323	Sequence 3323, Ap
36	103.5	5.5	399	7	US-11-028-149-3323	Sequence 3323, Ap
37	103.5	5.5	399	7	US-11-027-802-3323	Sequence 3323, Ap
38	103.5	5.5	399	7	US-11-027-890-3323	Sequence 3323, Ap
39	103.5	5.5	399	7	US-11-027-892-3323	Sequence 3323, Ap
40	103.5	5.5	399	7	US-11-028-099-3323	Sequence 3323, Ap
41	103.5	5.5	399	7	US-11-028-197-3323	Sequence 3323, Ap
42	103.5	5.5	399	7	US-11-027-844-3323	Sequence 3323, Ap
43	103.5	5.5	399	7	US-11-028-050-3323	Sequence 3323, Ap
44	103.5	5.5	399	7	US-11-028-457-3323	Sequence 3323, Ap
45	103.5	5.5	399	7	US-11-027-891-3323	Sequence 3323, Ap

ALIGNMENTS

RESULT 1
US-11-061-894-14
; Sequence 14, Application US/11061894
; GENERAL INFORMATION:
; APPLICANT: McCutchen, Billy F.
; APPLICANT: Abad, Andre R.
; TITLE OF INVENTION: Methods for Enhancing Insect Resistance
; TITLE OF INVENTION: in Plants
; FILE REFERENCE: 035718/286812
; CURRENT APPLICATION NUMBER: US/11/061,894
; CURRENT FILING DATE: 2005-02-18
; PRIOR APPLICATION NUMBER: 60/546,845
; PRIOR FILING DATE: 2004-02-23
; PRIOR APPLICATION NUMBER: 60/546,533
; PRIOR FILING DATE: 2004-02-20
; NUMBER OF SEQ ID NOS: 20
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 14
; LENGTH: 386
; TYPE: PRT
; ORGANISM: Solanum tuberosum
US-11-061-894-14

Query Match 54.4%; Score 1014; DB 7; Length 386;
Best Local Similarity 88.3%; Pred. No. 9e-76;
Matches 196; Conservative 12; Mismatches 14; Indels 0; Gaps 0;

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Qy        145 LGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA 204
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Db         25 LGEMVTVLSIDGGGIKGIIPAIILEFLEGQLQEVDNNKDARLADYFDVIGGTSTGGLLTA 84

Qy        205 MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVH 264
              ||:|||||||||||:|||||||||| ||| || | ||:||||||:|||||||||||||
Db         85 MITTPNENNRPFAAAKDIVPFYFEHGPHIFNYSGSIFGPRYDGKYLLQVLQEKLGETRVH 144

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFVTNTS 324
              |||||| |||||||||||||||||| ||:|||||||| ||||||| ||||||:|||:||
Db        145 QALTEVAISSFDIKTNKPVIFTKSNLAESPQLDAKMYDICYSTAAAPIYFPPHHFVTHTS 204

Qy        325 NGDEYEFNLVDGAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||  |||||||||||||| ||||||:|||||||| ||||:||:
Db        205 NGATYEFNLVDGAVATVGDPALLSLSVATRLAQDDPAFSSIK 246
```

RESULT 2
US-11-061-894-10
; Sequence 10, Application US/11061894
; GENERAL INFORMATION:

```
;  APPLICANT: McCutchen, Billy F.
;  APPLICANT:  Abad, Andre R.
;  TITLE OF INVENTION: Methods for Enhancing Insect Resistance
;  TITLE OF INVENTION:  in Plants
;  FILE REFERENCE: 035718/286812
;  CURRENT APPLICATION NUMBER: US/11/061,894
;  CURRENT FILING DATE:  2005-02-18
;  PRIOR APPLICATION NUMBER: 60/546,845
;  PRIOR FILING DATE: 2004-02-23
;  PRIOR APPLICATION NUMBER: 60/546,533
;  PRIOR FILING DATE: 2004-02-20
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 10
;   LENGTH: 408
;   TYPE: PRT
;   ORGANISM: Pentaclethra macroloba
US-11-061-894-10

  Query Match             28.3%;  Score 528.5;  DB 7;  Length 408;
  Best Local Similarity   53.1%;  Pred. No. 1.1e-35;
  Matches  113;  Conservative   33;  Mismatches   50;  Indels   17;  Gaps    7;

Qy        146 GEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAM 205
              | :||||:||||||||||||  ||: ||  ||  |::  ||||:||||: ||||||::||:
Db         33 GNLVTVLAIDGGGIRGIIPGVILKQLEATLQRWDSS--ARLAEYFDVVAGTSTGGIITAI 90

Qy        206 ISTPNENN--RPFAAAKEIVPFYFEHGPQIFNPSGQ-----ILGPKYDGKYLMQVLQEKL 258
              :: |:  |  ||  ||:||: || |||| ||| |       |  |||||||| ::: :||
Db         91 LTAPDPQNKDRPLYAAEEIIDFYIEHGPSIFNKSTACSLPGIFCPKYDGKYLQEIISQKL 150

Qy        259 GETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHY 318
               || : |  | ||| |||||  :| ||:   |   |||: |: |:   |:|||  |||:|
Db        151 NETLLDQTTTNVVIPSFDIKLLRPTIFSTFKLEEVPELNVKLSDVCMGTSAAPIVFPPYY 210

Qy        319 FVTNTSNGDEYEFNLVDGAVATVAD-PALLSIS 350
              |     :||  ||||||||:  :|| || :::|
Db        211 F----KHGDT-EFNLVDGAI--IADIPAPVALS 236


RESULT 3
US-11-061-894-12
; Sequence 12, Application US/11061894
; GENERAL INFORMATION:
;  APPLICANT: McCutchen, Billy F.
;  APPLICANT:  Abad, Andre R.
;  TITLE OF INVENTION: Methods for Enhancing Insect Resistance
;  TITLE OF INVENTION:  in Plants
;  FILE REFERENCE: 035718/286812
;  CURRENT APPLICATION NUMBER: US/11/061,894
;  CURRENT FILING DATE:  2005-02-18
;  PRIOR APPLICATION NUMBER: 60/546,845
;  PRIOR FILING DATE: 2004-02-23
;  PRIOR APPLICATION NUMBER: 60/546,533
;  PRIOR FILING DATE: 2004-02-20
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 12
;   LENGTH: 408
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Lipase (codon optimized mopentin)
US-11-061-894-12

  Query Match             28.3%;  Score 528.5;  DB 7;  Length 408;
  Best Local Similarity   53.1%;  Pred. No. 1.1e-35;
  Matches  113;  Conservative   33;  Mismatches   50;  Indels   17;  Gaps    7;

Qy        146 GEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAM 205
              | :||||:||||||||||||  ||: ||  ||  |::  ||||:||||: ||||||::||:
Db         33 GNLVTVLAIDGGGIRGIIPGVILKQLEATLQRWDSS--ARLAEYFDVVAGTSTGGIITAI 90

Qy        206 ISTPNENN--RPFAAAKEIVPFYFEHGPQIFNPSGQ-----ILGPKYDGKYLMQVLQEKL 258
              :: |:  |  ||  ||:||: || |||| ||| |       |  |||||||| ::: :||
Db         91 LTAPDPQNKDRPLYAAEEIIDFYIEHGPSIFNKSTACSLPGIFCPKYDGKYLQEIISQKL 150

Qy        259 GETRVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHY 318
               || : |  | ||| |||||  :| ||:   |   |||: |: |:   |:|||  |||:|
Db        151 NETLLDQTTTNVVIPSFDIKLLRPTIFSTFKLEEVPELNVKLSDVCMGTSAAPIVFPPYY 210

Qy        319 FVTNTSNGDEYEFNLVDGAVATVAD-PALLSIS 350
              |     :||  ||||||||:  :|| || :::|
Db        211 F----KHGDT-EFNLVDGAI--IADIPAPVALS 236


RESULT 4
PCT-US05-07908-100
; Sequence 100, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 100
;   LENGTH: 350
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from an environmental sample.
PCT-US05-07908-100

  Query Match             14.4%;  Score 268.5;  DB 1;  Length 350;
  Best Local Similarity   34.1%;  Pred. No. 2.6e-14;
  Matches   74;  Conservative   45;  Mismatches   73;  Indels   25;  Gaps    8;

Qy        151 VLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAMISTPN 210
              :|||||||||||||| ||  | :|: :       |   ||:| ||||||:: | :: |:
Db          6 ILSIDGGGIRGIIPAAILVELAKRLEGLP------LHKAFDMIAGTSTGGIIAAGLTCPH 59

Qy        211 ENNRPFAAA--KEIVPFYFEHGPQIF---------NPSGQILGPKYDGKYLMQVLQEKLG 259
              ::   ||    :::  | :|| :||          || | :  |:|    |   |: :||
Db         60 PDDEETAACTPTDLLKLYVDHGGKIFEKNPILGLINPFG-LNDPRYQPDELENRLKAQLG 118

Qy        260 ET-RVHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHY 318
              | : : ||:|:|:::||:  : :    ::  ||   : : :: : :|:||||||||
Db        119 LTATLDKGLTKVLITAYDIQQRQALFMANTDNENS---NFRYWEAARATSAAPTYFPPAL 175

Qy        319 FV-TNTSNGDEYEFNLVDGAVATVADPALLSISVATR 354
                 | |:    |:|| |   |:  :|:  |  |
Db        176 IERVGEKNKDKRFVPLIDGGV--FANDPILAAYVEAR 210


RESULT 5
PCT-US05-07908-18
; Sequence 18, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
```

```
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 18
;   LENGTH: 378
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from an environmental sample.
PCT-US05-07908-18

  Query Match             13.0%;  Score 242;  DB 1;  Length 378;
  Best Local Similarity   29.6%;  Pred. No. 4.4e-12;
  Matches   72;  Conservative   37;  Mismatches   96;  Indels   38;  Gaps    7;

Qy        130 RKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADY 189
              :| |: : |: |  :      :||:||||||| :    |: :|  |||  :  |  | |:
Db          2 KKSLQQHLAADGSPK-----NILSLDGGGIRGALTLGFLKKIESILQE-KHGKDYLLCDH 55

Qy        190 FDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKY 249
              ||:||||||| :: | ::            :||   | : | :||        |    ||
Db         56 FDLIGGTSTGSIIAAALAIG-------MTVEEITKMYMDLGGKIFGKKRSFWRPWETAKY 108

Qy        250 LMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSN------LANSPELDAKMYDI 303
              |      |  |  :  |  : :: |  |:|   ::  :::      | | |:  | ||
Db        109 LKAGYDHKALEKSLKDAFQDFLLGSDQIRTGLCIVAKRADTNSIWPLINHPK--GKFYDS 166

Qy        304 SY------------STAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSIS 350
                           :: |||||| |         ||  :   ||| |:   :|||  :
Db        167 EQGKNKNIPLWQAVRASTAAPTYFAPQLI----DVGDGQKAAFVDGGVSMANNPALTLLK 222

Qy        351 VAT 353
              |||
Db        223 VAT 225


RESULT 6
PCT-US05-07908-66
; Sequence 66, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 66
;   LENGTH: 387
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from an environmental sample.
PCT-US05-07908-66

  Query Match             12.8%;  Score 239.5;  DB 1;  Length 387;
  Best Local Similarity   29.0%;  Pred. No. 7.4e-12;
  Matches   73;  Conservative   46;  Mismatches   82;  Indels   51;  Gaps    9;

Qy        127 LSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQ-EMDNNADAR 185
              | |: |      | || :      :|: ||||| |::   ||  :|  |: ::  : :
Db          5 LEDKIK------SSGPKK------ILACDGGGILGLMSVEILAKIEADLRTKLGKDQNFV 52

Qy        186 LADYFDVIGGTSTGGLLTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQI--LGP 243
              |||||| : ||||| :: | ||:         :  :|  || : | |:|: :  :  |
Db         53 LADYFDFVCGTSTGAIIAACISSG-------MSMAKIRQFYLDSGKQMFDKASLLKRLQY 105

Qy        244 KYDGKYLMQVLQ----EKLGETRVHQALTEVVISSFDIKTNKPVIFTKSN------LANS 293
              || : | : |:    |:| |        |:  : |  :||   ::    :      ::|:
Db        106 SYDDEPLARQLRAAFDEQLKE-------TDAKLGSAHLKTLLMMVMRNHSTDSPWPVSNN 158

Qy        294 P------------ELDAKMYDISYSTAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATV 341
              |            |:  :: :  :: ||||||||          :|| |  ||| | |
Db        159 PYAKYNNIARKDCNLNLPLWQLVRASTAAPTYFPPEVITFADGTPEEYNFIFVDGGVTTY 218

Qy        342 ADPALLSISVAT 353
                :|| |:  :||
Db        219 NNPAYLAFLMAT 230


RESULT 7
PCT-US05-07908-166
; Sequence 166, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 166
;   LENGTH: 308
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from environmental sample
;   FEATURE:
;   NAME/KEY: DOMAIN
;   LOCATION: (7)...(191)
;   OTHER INFORMATION: Patatin-like phospholipase
PCT-US05-07908-166

  Query Match             12.6%;  Score 234.5;  DB 1;  Length 308;
  Best Local Similarity   31.5%;  Pred. No. 1.4e-11;
  Matches   75;  Conservative   33;  Mismatches   75;  Indels   55;  Gaps   10;

Qy        151 VLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAMISTPN 210
              :||:|||||||:: | :|| || :                |:| ||||||::
Db          6 ILSLDGGGIRGLLSAILLERLEAEAPNW--------LSQVDLIAGTSTGGIIA------- 50

Qy        211 ENNRPFAAAKEIVP-----FYFEHGPQIFNPS--------GQILGPKYDGKYLMQVLQEK 257
                    || : |       |   |  ||: |        |:| |  || | | : |:
Db         51 -----LGLAKGLSPTQLRNLYQLRGAAIFDDSWWDDVLDIGKISGADYDNKQLTKELKTI 105
```

```
Qy        258 LGETRVHQALTEVVISSFDIKTNK--PV--IFTKSNLANSPELDAK----MYDISYSTAA 309
              || |:: :    |:|||||: : :  |    :|     | | :|:      | ::  |:|
Db        106 LGNTKLRELSKRVLISSFDLDSEERDPTKRSWTPKFFHNFPGIDSDGEQLAYKVALYTSA 165

Qy        310 APTYFPPHYFVTNTSNGDEYEFNLVD-GAVATVADPALLSISVATRLAQKDPAFASIR 366
              ||||||       | :|       :| | ||     | |: :  ||  :  | |: ||
Db        166 APTYFP-------TVDG------YIDGGVVANNPSMAALAQTQDTRALKTPPRFSEIR 210


RESULT 8
PCT-US05-07908-132
; Sequence 132, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 132
;   LENGTH: 308
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from an environmental sample
;   FEATURE:
;   NAME/KEY: DOMAIN
;   LOCATION: (11)...(194)
;   OTHER INFORMATION: Patatin-like phospholipase
PCT-US05-07908-132

  Query Match             10.6%;  Score 197;  DB 1;  Length 308;
  Best Local Similarity   26.2%;  Pred. No. 1.7e-08;
  Matches   59;  Conservative   44;  Mismatches   62;  Indels   60;  Gaps   10;

Qy        149 VTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFD-------VIGGTSTGGL 201
              : |:|||||||||:   |:|:              ||   :        :  ||||||:
Db          8 IDVISIDGGGIRGVFSVTLLD---------------RLCKTYPNLLKKTYLFAGTSTGGI 52

Qy        202 LTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPS--------GQILGPKYDGKYLMQV 253
              :   ::    | |     ||   | ::| :||: |        |  :| ||  | |  |
Db         53 IALGLA---NNMTPL----EIRALYEKNGSKIFHKSVWEGVKDLGGTIGAKYSNKNLKSV 105

Qy        254 LQEKLGETRVHQALTEVVISSFDIKTN--------KPVIFTKSNLANSPELDAKMYDISY 305
              |::  |  ::     :|:| :||: ::        ||  :   :   : :::  : |::
Db        106 LKKYFGSLKLKDLSKKVLIPTFDLHSDKEEGYPMWKPKFYHNFD-GETEDIEKLVLDVAM 164

Qy        306 STAAAPTYFPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSIS 350
               |:||||:||       | ||       :|| |    :|:: :::
Db        165 MTSAAPTFFP-------TYNGH------IDGGV-VANNPSMAALA 195


RESULT 9
PCT-US05-07908-36
; Sequence 36, Application PC/TUS0507908
; GENERAL INFORMATION:
;  APPLICANT: DIVERSA CORPORATION
;  APPLICANT:  GRAMATIKOVA, Svetlana
;  APPLICANT:  HAZLEWOOD, Geoff
;  APPLICANT:  BARTON,Nelson
;  APPLICANT:  LAM, David
;  TITLE OF INVENTION: PHOSPHOLIPASES, NUCLEIC ACIDS ENCODING THEM
;  TITLE OF INVENTION:  AND METHODS FOR MAKING AND USING THEM
;  FILE REFERENCE: 56446-20042.49
;  CURRENT APPLICATION NUMBER: PCT/US05/07908
;  CURRENT FILING DATE:  2005-03-08
;  PRIOR APPLICATION NUMBER: 10/796,907
;  PRIOR FILING DATE: 2004-03-08
;  PRIOR APPLICATION NUMBER: 10/421,654
;  PRIOR FILING DATE: 2003-04-21
;  PRIOR APPLICATION NUMBER: 60/374,313
;  PRIOR FILING DATE: 2002-04-19
;  NUMBER OF SEQ ID NOS: 174
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 36
;   LENGTH: 462
;   TYPE: PRT
;   ORGANISM: Unknown
;   FEATURE:
;   OTHER INFORMATION: Obtained from an environmental sample.
PCT-US05-07908-36

  Query Match             8.8%;  Score 165;  DB 1;  Length 462;
  Best Local Similarity   25.6%;  Pred. No. 1.3e-05;
  Matches   57;  Conservative   44;  Mismatches   90;  Indels   32;  Gaps    8;

Qy        151 VLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTAMISTPN 210
              :|::||||:|| :    || :|  | |         |  :||:||||||| ::   ::
Db         28 ILALDGGGVRGAVSVAFLERIEAVL-EARLGRKVLLGHWFDLIGGTSTGAIIGGALAMG- 85

Qy        211 ENNRPFAAAKEIVPFYFEHGPQIF-NPSGQI--LGP---KYDGKYLMQVLQEKLGETRVH 264
                    ||:::  || |  |::| :|  :|  | |   |:| : | : :   :|:: :
Db         86 ------FAAEDVQRFYHELAPRVFRHPLLRIGLLRPFRAKFDARLLREEIHRIIGDSTLG 139

Qy        265 QALTEVVISSFDIKTNKPVIFTKSNLANSP------------ELDAKMYDISYSTAAAP 311
                   : ::: | :   :    :  |||:              |  :  :  :: |||
Db        140 D---KALMTGFALVAKRMDTGSTWILANNKRSKYWEGRDGVVGNKDYLLGSLIRASTAAP 196

Qy        312 TYFPPHYFVTNTSNGDEYEFN--LVDGAVATVADPALLSISVA 352
              || |   |   :  |         ||| |    :|:|  : :|
Db        197 LYFDPEEVVIAEARKDIEGIRGLFVDGGVTPHNNPSLAMLLLA 239


RESULT 10
US-60-655-875-130981
; Sequence 130981, Application US/60655875
; GENERAL INFORMATION:
;  APPLICANT: Boukharov, Andrey
;  APPLICANT:  Du, Zijing
;  APPLICANT:  Guo, Liang
;  APPLICANT:  Kovalic, David
;  APPLICANT:  Lu, Maolong
;  APPLICANT:  McCarter, James
;  APPLICANT:  Miller, Nancy
;  APPLICANT:  Williams, Deryck
;  APPLICANT:  Vaudin, Mark
;  APPLICANT:  Wu, Wei
;  TITLE OF INVENTION: METHODS FOR GENETIC CONTROL OF HETERODERA INFESTATIONS
;  TITLE OF INVENTION:  IN PLANTS AND COMPOSITIONS THEREOF
;  FILE REFERENCE: 38-21(53885)
;  CURRENT APPLICATION NUMBER: US/60/655,875
;  CURRENT FILING DATE:  2005-02-24
;  NUMBER OF SEQ ID NOS: 171306
; SEQ ID NO 130981
;   LENGTH: 364
;   TYPE: PRT
;   ORGANISM: Heterodera glycines
;   FEATURE:
;   OTHER INFORMATION: Coding regions on vcDNA: vcDNA=SeqID_57404; Strand=-; Position=1
;   OTHER INFORMATION: -78,644-850,1308-1421,1629-1819,2004-2018,2127-2302,2775-2851,2906
;   OTHER INFORMATION: -3040,3211-3312
;   FEATURE:
;   OTHER INFORMATION: Homolog annotation: Hit_ID=XP_394049.1; Match level="QueryCoverage
```

```
;   OTHER INFORMATION: =80%, HitCoverage=37%, E-value=3e-36, Identity=36%"; Hit descript
;   OTHER INFORMATION: =similar to CG6718-PB [Apis mellifera]
US-60-655-875-130981

  Query Match             8.3%;  Score 154;  DB 8;  Length 364;
  Best Local Similarity   27.7%;  Pred. No. 7.7e-05;
  Matches   74;  Conservative   37;  Mismatches   92;  Indels   64;  Gaps   14;

Qy         73 VQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL-KRFAKLLSDRK 131
              | |   ||| :|               |: :|||   |     |||: | : ::
Db         24 VLEKKKTGTKSE---------------ESTVKKPECVD----VEEAIWKEWQQM---AL 60

Qy        132 KLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADY-- 189
              | | ||    | : |  |  ||:|||||||:   :| :|  :      |      ::
Db         61 KTRRNKQRKTPRRKGTGVRALSLDGGGIRGIVLVQMLIEMESLMYGEGLQAGGHEKNFVQ 120

Qy        190 --FDVIGGTSTGGLLT-AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
                |: | ||||| ::  |::|          :  : : |      :|    |::|  |:
Db        121 KNFNWIIGTSTGAIVALALVSG--------ISLIDALRLYLRLKDSVFGARAQLIG--YN 170

Qy        247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTKSN-LANSPELDAKM----- 300
               : |   || : ||   :: : |  :|  :||  |  :|| :  :   |    |
Db        171 AQNLETFLQAQFGE---NKKMAE--LSRGNIKGLKIGLFTTATYVGQKPPRLVKFRNFIS 225

Qy        301 ----YD---------ISYSTAAAPTYF 314
                  ||           ||| ||||||
Db        226 ALNEYDPYKTNIWLAARYST-AAPTYF 251


RESULT 11
US-11-061-233-8
; Sequence 8, Application US/11061233
; GENERAL INFORMATION:
;  APPLICANT: McCutchen, Billy F.
;  APPLICANT:  Abad, Andre R.
;  APPLICANT:  Wong, James F.
;  APPLICANT:  Yu, Guo Cao
;  TITLE OF INVENTION: Lipases and Methods of Use
;  FILE REFERENCE: 035718/286811
;  CURRENT APPLICATION NUMBER: US/11/061,233
;  CURRENT FILING DATE:  2005-02-18
;  PRIOR APPLICATION NUMBER: 60/546,605
;  PRIOR FILING DATE: 2004-02-20
;  NUMBER OF SEQ ID NOS: 8
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 314
;   TYPE: PRT
;   ORGANISM: Nitrosomonas europaea
US-11-061-233-8

  Query Match             7.9%;  Score 146.5;  DB 7;  Length 314;
  Best Local Similarity   24.3%;  Pred. No. 0.00026;
  Matches   55;  Conservative   46;  Mismatches   92;  Indels   33;  Gaps   10;

Qy        142 PGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGL 201
              ||    :: ||::|||| :|        :  | |:|::      |   ||:: ||||| :
Db          7 PG-ASALLRVLTLDGGGAKGF-------YTLGVLKEIEAMVGCPLHQKFDLVFGTSTGAI 58

Qy        202 LTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGET 261
              : ::|:  :       :   |:  | :| | : :   |   |    : | ::  |  |:
Db         59 IASLIALGH-------SVDSILELYRKHVPTVMS---QKTAPA-RSQALKKLASEVFGDA 107

Qy        262 RVHQALTEVVISSFDIKTNKPVIFTKSNLANS--------PELDAKMYDISYSTAAAPTY 313
                  | : |  :    | :|:|| | ::| :       |     : |   :: :|  :
Db        108 TFSDVKTGIGIVTAKWLTERPMIF-KGSVAQAHGQVGTFVPGFGVSIADAVKASCSAYPF 166

Qy        314 FPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKD 359
              |     |  || |:: |  |:||      :| | :|: | :  : |
Db        167 F--ERTVVRTSMGEDIE--LIDGGYC-ANNPTLYAIADAVQALRSD 207


RESULT 12
US-11-061-894-8
; Sequence 8, Application US/11061894
; GENERAL INFORMATION:
;  APPLICANT: McCutchen, Billy F.
;  APPLICANT:  Abad, Andre R.
;  TITLE OF INVENTION: Methods for Enhancing Insect Resistance
;  TITLE OF INVENTION:  in Plants
;  FILE REFERENCE: 035718/286812
;  CURRENT APPLICATION NUMBER: US/11/061,894
;  CURRENT FILING DATE:  2005-02-18
;  PRIOR APPLICATION NUMBER: 60/546,845
;  PRIOR FILING DATE: 2004-02-23
;  PRIOR APPLICATION NUMBER: 60/546,533
;  PRIOR FILING DATE: 2004-02-20
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8
;   LENGTH: 314
;   TYPE: PRT
;   ORGANISM: Nitrosomonas europaea
US-11-061-894-8

  Query Match             7.9%;  Score 146.5;  DB 7;  Length 314;
  Best Local Similarity   24.3%;  Pred. No. 0.00026;
  Matches   55;  Conservative   46;  Mismatches   92;  Indels   33;  Gaps   10;

Qy        142 PGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGL 201
              ||    :: ||::|||| :|        :  | |:|::      |   ||:: ||||| :
Db          7 PG-ASALLRVLTLDGGGAKGF-------YTLGVLKEIEAMVGCPLHQKFDLVFGTSTGAI 58

Qy        202 LTAMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGET 261
              : ::|:  :       :   |:  | :| | : :   |   |    : | ::  |  |:
Db         59 IASLIALGH-------SVDSILELYRKHVPTVMS---QKTAPA-RSQALKKLASEVFGDA 107

Qy        262 RVHQALTEVVISSFDIKTNKPVIFTKSNLANS--------PELDAKMYDISYSTAAAPTY 313
                  | : |  :    | :|:|| | ::| :       |     : |   :: :|  :
Db        108 TFSDVKTGIGIVTAKWLTERPMIF-KGSVAQAHGQVGTFVPGFGVSIADAVKASCSAYPF 166

Qy        314 FPPHYFVTNTSNGDEYEFNLVDGAVATVADPALLSISVATRLAQKD 359
              |     |  || |:: |  |:||      :| | :|: | :  : |
Db        167 F--ERTVVRTSMGEDIE--LIDGGYC-ANNPTLYAIADAVQALRSD 207


RESULT 13
US-60-655-875-139557
; Sequence 139557, Application US/60655875
; GENERAL INFORMATION:
;  APPLICANT: Boukharov, Andrey
;  APPLICANT:  Du, Zijing
;  APPLICANT:  Guo, Liang
;  APPLICANT:  Kovalic, David
;  APPLICANT:  Lu, Maolong
;  APPLICANT:  McCarter, James
;  APPLICANT:  Miller, Nancy
;  APPLICANT:  Williams, Deryck
;  APPLICANT:  Vaudin, Mark
;  APPLICANT:  Wu, Wei
;  TITLE OF INVENTION: METHODS FOR GENETIC CONTROL OF HETERODERA INFESTATIONS
;  TITLE OF INVENTION:  IN PLANTS AND COMPOSITIONS THEREOF
;  FILE REFERENCE: 38-21(53885)
;  CURRENT APPLICATION NUMBER: US/60/655,875
;  CURRENT FILING DATE:  2005-02-24
;  NUMBER OF SEQ ID NOS: 171306
; SEQ ID NO 139557
;   LENGTH: 239
;   TYPE: PRT
;   ORGANISM: Heterodera glycines
;   FEATURE:
;   OTHER INFORMATION: Coding regions on vcDNA: vcDNA=SeqID_65980; Strand=+; Position=1
;   OTHER INFORMATION: -78,643-849,1362-1475,1684-1826,2183-2358
;   FEATURE:
;   OTHER INFORMATION: Homolog annotation: Hit_ID=XP_394049.1; Match level="QueryCoverage
;   OTHER INFORMATION: =68%, HitCoverage=21%, E-value=4e-20, Identity=35%"; Hit descript
```

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;  OTHER INFORMATION: =similar to CG6718-PB [Apis mellifera]
US-60-655-875-139557

  Query Match             7.3%;  Score 136.5;  DB 8;  Length 239;
  Best Local Similarity   25.3%;  Pred. No. 0.0012;
  Matches   64;  Conservative   37;  Mismatches   95;  Indels   57;  Gaps   10;

Qy          73 VQENALTGTTTEMDDASEANMELLVQVGENLLKKPVSEDNPETYEEAL-KRFAKLLSDRK 131
               | |   ||| :|                |: :|||   |     |||: | : ::
Db          24 VLEKKKTGTKSE---------------ESTVKKPECVD----VEEAIWKEWQQM---AL 60

Qy         132 KLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEGQLQEMDNNADARLADY-- 189
               | | |:    | : |  |  ||:|||||||:   :|  :|  :       |     ::
Db          61 KTRRNEQRKTPRRTGMGVRALSLDGGGIRGIVLVQMLIEMESLMYGEGLQAGGHEKNFVQ 120

Qy         190 --FDVIGGTSTGGLLT-AMISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYD 246
                 |: | ||||| ::  |::|          :  : :  |       :|     |::|  |:
Db         121 KNFNWIIGTSTGAIVALALVSG--------TSLIDALRLYLRLKDSVFGARAQLIG--YN 170

Qy         247 GKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFTK-----SNLANSPELDAKMY 301
                : |   || :|  | :                ||    |     |:|         ::
Db         171 AQNLETFLQAQLFTTATYVG------------QKPPRLVKFRNFTSDLNEYNPYKTNIW 217

Qy         302 DISYSTAAAPTYF 314
                 :  ::|||||
Db         218 LAARYSSAAPTYF 230


RESULT 14
US-60-655-875-127287
; Sequence 127287, Application US/60655875
; GENERAL INFORMATION:
;  APPLICANT: Boukharov, Andrey
;  APPLICANT:  Du, Zijing
;  APPLICANT:  Guo, Liang
;  APPLICANT:  Kovalic, David
;  APPLICANT:  Lu, Maolong
;  APPLICANT:  McCarter, James
;  APPLICANT:  Miller, Nancy
;  APPLICANT:  Williams, Deryck
;  APPLICANT:  Vaudin, Mark
;  APPLICANT:  Wu, Wei
;  TITLE OF INVENTION: METHODS FOR GENETIC CONTROL OF HETERODERA INFESTATIONS
;  TITLE OF INVENTION:  IN PLANTS AND COMPOSITIONS THEREOF
;  FILE REFERENCE: 38-21(53885)
;  CURRENT APPLICATION NUMBER: US/60/655,875
;  CURRENT FILING DATE:  2005-02-24
;  NUMBER OF SEQ ID NOS: 171306
; SEQ ID NO 127287
;   LENGTH: 258
;   TYPE: PRT
;   ORGANISM: Heterodera glycines
;   FEATURE:
;   OTHER INFORMATION: Coding regions on vcDNA: vcDNA=SeqID_53710; Strand=-; Position=1
;   OTHER INFORMATION: -129,619-750,1035-1159,1403-1560,1608-1656,1896-1929,1992-2066,21
;   OTHER INFORMATION: -2186
;   FEATURE:
;   OTHER INFORMATION: Homolog annotation: Hit_ID=NP_872170.1; Match level="QueryCoverag
;   OTHER INFORMATION: =91%, HitCoverage=24%, E-value=6e-57, Identity=45%"; Hit descript
;   OTHER INFORMATION: =ankyrin and patatin family member (5V188) [Caenorhabditis elegan
;   OTHER INFORMATION: emb|CAD54162.1| Hypothetical protein W
US-60-655-875-127287

  Query Match             7.2%;  Score 133.5;  DB 8;  Length 258;
  Best Local Similarity   24.0%;  Pred. No. 0.0023;
  Matches   56;  Conservative   39;  Mismatches   59;  Indels   79;  Gaps   12;

Qy         114 ETYEEALKRFAKLLSDRKKLRANKASYGPGQLGEMVTVLSIDGGGIRGIIPATILEFLEG 173
               : |:| | :  :: ||             |      : |||:|||||||::   :|  :|
Db           1 DIYDEVLDKLPEVSSDE--------DTPPDH--NFINVLSLDGGGIRGLVIIQLLICVER 50

Qy         174 QLQEMDNNADARLADYFDVIGGTSTGGLLT---AMISTPNENNRPFAAAKEIVPFYFE-- 228
                 : |        :  ||| :|||||| ::|    ||  | ::  | :   |::|   |:

Db          51 IMGE-------PIFPYFDWVGGTSTGAMVTAGLAMGQTLHQIQRLYLRFKDMV---FDNR 100

Qy         229 --HGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETRVHQALTEVVISSFDIKTNKPVIFT 286
                 |  |:                | : :::::|          | : |  |:|  : ::||
Db         101 RPHNTQV---------------LEKFIRQEMG--------AETMFS--DLKWPR-LMFT 133

Qy         287 KSNLA-----------NSPELDAKMYDISYST-------------AAAPTYF 314
                 :                |  | :  :: | |              :||||||
Db         134 TTRAEFFPVQLELMRNYKLPTNDEENEELGYRTPDDLLLWKVLRRSSAAPTYF 186


RESULT 15
US-11-045-874-10
; Sequence 10, Application US/11045874
; GENERAL INFORMATION:
;  APPLICANT: Georgia Tech Research Corporation
;  TITLE OF INVENTION: Methods and Compositions for NAD(P)(H) Oxidases
;  FILE REFERENCE: GTRC130PCT
;  CURRENT APPLICATION NUMBER: US/11/045,874
;  CURRENT FILING DATE:  2005-01-28
;  PRIOR APPLICATION NUMBER: PCT/US03/24067
;  PRIOR FILING DATE: 2003-07-31
;  PRIOR APPLICATION NUMBER: US 60/399,850
;  PRIOR FILING DATE: 2002-07-31
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 10
;   LENGTH: 444
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic
US-11-045-874-10

  Query Match             6.1%;  Score 113;  DB 7;  Length 444;
  Best Local Similarity   21.0%;  Pred. No. 0.25;
  Matches  100;  Conservative   53;  Mismatches  113;  Indels  210;  Gaps   25;

Qy           4 YKKMLLLSLGT-------------------GTTSEFDKTYTAKEAATWTAVHWMLVIQKM 44
                 |:|  ::| ||                    |  ||:||  :
Db          32 YEKTNIVSFGTCGLPYFVGGFFDNPNTMISRTQEEFEKTGIS------------------ 73

Qy          45 TDAASSYMTDYYLSTAFQAL--DSKNNYLRVQENALTGTTTEMDDASEANMELLVQVGEN 102
                          : |  :|:  |:||| : | :|  |||       :    :|::  |
Db          74 ------------VKTNHEAIKVDAKNNTI-VIKNQKTGTI-----FNNTYDQLMIATGAK 115

Qy         103 LLKKPVSEDNPETYEEALKRF-----AKLLSDRKKLRANKASYGPGQLG----------- 146
                  :  |::  | | :   ||        | | ||:::: | |  | | :|
Db         116 PIIPPINNINLENF-HTLKNLEDGQKIKKLMDREEIK-NIAIIGGGYIGIEMVEAAKNKR 173

Qy         147 -------------------EMVTVLSID----------------------GGGI------ 159
                                  |:||::  :                      ||:
Db         174 KNVRLIQLDKHILIDSFDEEIVTIMEEELTKKGVNLHTNEPVKSLIGEKKAGGVVTNKNT 233

Qy         160 ---------RGIIPATILEFLEGQLQEMDNNADARLADYFDVIGGTSTGGLLTA------ 204
                       || | |  |||| ||:   | |   : :|   | ||   : :|
Db         234 YQADAVILATGIKPDT--EFLENQLKTTKNGA-IIVNEY----GETSIKNIFSAGDCATI 286

Qy         205 --MISTPNENNRPFAAAKEIVPFYFEHGPQIFNPSGQILGPKYDGKYLMQVLQEKLGETR 262
                 ::|  ||   | |                  |  |:|:|    |
Db         287 YNIVSKKNE-YIPLATTA--------------NKLGRIVGENLAGN-------------- 317

Qy         263 VHQALTEVVISSFDIKTNKPVIFTKSNLANSPELDAKMYDISYSTAAAPTYFPPHYFV-- 320
                |  |  :  : |  ||    ::  ::       | |||   | | |            ||
Db         318 -HTAF-KGTLGSASIK----ILSLEAARTGLTEKDAKRLQIKYKT----------IFVKD 361

Qy         321 ---TNTSNGDE-------YEFN--LVDGAVATVADPAL-----LSISVATRLAQKD 359
                   ||   | |       || |  :: || ||  : |:     |||:: :: |  |:
Db         362 KNHTNYYPGQEDLYIKLIYEENTKIILGAQATGKNGAVMRIHALSIAIYSKLTTKE 417


Search completed: April  8, 2005, 08:06:45
Job time : 39 secs
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